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2	GHSA Action Package Indicators	Indicator Capacity Levels	
ZOONOTIC DISEASE (ZD)	Surveillance systems in place for priority zoonotic diseases and pathogens	<p>Level 1: No mechanism in place</p>	
		<p>Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place</p>	
		<p>Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern</p>	
		<p>Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern</p>	
		<p>Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement</p>	
		<p>Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.</p>	
		<p>Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.</p>	
	One Health Workforce** (Veterinary or Animal Health Workforce)	<p>Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.</p>	
		<p>Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.</p>	
		<p>Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing</p>	
		<p>Mechanisms for continuous improvement</p>	
		<p>Level 1: No mechanism in place</p>	

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2	GHSA 5-Year Country Roadmap Milestones	Key Results	
3	<ul style="list-style-type: none"> Prioritized list of top five (5) joint-ministry zoonotic diseases established. (Y1) Established and updated national plan for five (5) priority zoonotic diseases. (Y2) Initial characterization and mapping of zoonotic pathogens and risk assessment for likelihood of cross-over events conducted. (Y2) 	Reference Only - DO NOT FILL	
4	<ul style="list-style-type: none"> High risk human/animal interfaces (i.e. "value chains," land use change, etc.) mapped. (Y3) Priority zoonotic diseases included in country surveillance system with links to rapid response. (Y4) Reduction in prevalence of prioritized zoonotic diseases. (Y5) 	Reference Only - DO NOT FILL	
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8	<ul style="list-style-type: none"> Universities in Cameroon supported to join One Health university network to promote OH pre-service training agenda across stakeholder schools (SPH, MS, NS, VS, ES). (Y1) Universities review existing curriculum and training strategies across participating schools to align with OH teaching core competencies. (Y2) Curriculum and training strategies for pre-service across participating schools are aligned with OH teaching core competency needs and integrated into university programs. (Y3) OH workforce trained in accordance with One Health National Strategy. (Y5) 	Reference Only - DO NOT FILL	
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12	<ul style="list-style-type: none"> The National Program for the Fight Against Emerging and Reemerging Zoonoses (National Program for Zoonoses) is strengthened to prioritize government multi-sectoral coordination needs and to operationalize the One Health National Strategy. (Y1) Continued support to the National Program for Zoonoses to coordinate cross-sectoral engagement and to advance the One Health National Strategy. (Y3) Initiate priority livestock policy reforms. (Y2) Encourage the development of policy recommendations/specific 	Reference Only - DO NOT FILL	
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14	MECHANISMS FOR RESPONDING TO INFECTIONOUS ZOONOSES AND POTENTIAL ZOONOSES ARE ESTABLISHED AND FUNCTIONAL	Level 2: National policy, strategy or plan for the response to zoonotic events is in place Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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21		All Other Relevant Updates
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24	ANTIMICROBIAL RESISTANCE (AMR)	Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25		Level 2: National plan for detection and reporting of priority AMR pathogens has been approved Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens.
26		Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement.
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29	SURVEILLANCE OF INFECTIONS CAUSED BY AMR PATHOGENS	Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved.
26		Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved.
27		Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens.
28		Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year.

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14	interventions for human and animal sectors (national to sub-national level) based on mapping exercises/risk assessments (i.e. vaccination, risk communication materials, behavior change, etc.). (Y3)	
15	Coordinated and fully functional GCR multi-ministry system for rapid detection and timely response to outbreaks of zoonotic pathogens (including emerging pathogens) in place. (Y5)	
16	<ul style="list-style-type: none"> • Encourage the adoption of policies and practices (across levels of government) that mitigate cross-over events. (Y4) • Package of One Health risk reduction measures targeting high risk practices and behaviors that enable spillover validated and made ready for implementation. (Y4) 	
17		Reference Only - DO NOT FILL
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21	<ul style="list-style-type: none"> • Scope capacity for AMR surveillance and testing within existing networks. (Y1) • Encourage the development of an AMR National Policy and Strategy for animal and human health; priority AMR pathogens for humans/animals identified. (Y1) • Infection prevention control (IPC) measures are assessed and action plan developed. (Y1) 	
22	<ul style="list-style-type: none"> • Encourage the operationalization of the AMR National Policy and Strategy for animal and human health at selected pilot sites: o Multi-sectorial plan for AMR surveillance established 	
23	<ul style="list-style-type: none"> o Establish laboratory technical capacity to test and report on at least 3 of the 7 WHO priority AMR pathogens. (Y2) 	
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26	<ul style="list-style-type: none"> • National laboratory database for AMR is established. (Y4) • Standards for safe and appropriate use of antibiotics in livestock husbandry are established. (Y4) • Disease burden for cholera and other priority diseases is reduced. (Y4) • Review and evaluation of the AMR National Policy and Strategy conducted. (Y5) • Evaluate database system for its ability to improve lab capacity and quality assurance. (Y5) 	
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30	ANTIMICROBIAL STEWARDSHIP		Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement.
31			Level 1: No national plan for antimicrobial stewardship has been approved
32			Level 2: National plan for antimicrobial stewardship has been approved
33			Level 3: Designated centers are conducting some antimicrobial stewardship practices
34			Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year
35			Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement.
36		All Other Relevant Updates	
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39	(BSS)		Level 1: No elements of a comprehensive national BSS are in place
40			Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures
41			Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities.
42			Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.
43			Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment.
44			Level 1: No BSS training or plans are in place

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31	<ul style="list-style-type: none"> • Healthcare workers are trained in priority facilities on IPC. (Y2) • Assessment of national consumption and prescription patterns for antibiotics in humans and livestock completed. (Y2) • Understanding of reporting structures, requirements and needs in order to establish a database to improve lab capacity and quality assurance. (Y3) • Continuous access to IPC materials through strengthening the supply chain is achieved. (Y3) 	Reference Only - DO NOT FILL
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36		Reference Only - DO NOT FILL
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39	<ul style="list-style-type: none"> • Multi-sectoral Biosafety and Biosecurity (BS&S) technical working group created at the national level with representation at the sub-national level. (Y1) • Identification and documentation of dangerous pathogens for animal and human health completed at targeted facilities. (Y1) • Evaluation and monitoring program for the BS&S for priority biological pathogens developed and implemented or enhanced if exists. (Y2) 	Reference Only - DO NOT FILL
40	<ul style="list-style-type: none"> • BS&S infrastructure improvements initiated/completed (i.e. enhanced-Biosafety Cabinets (BSC) certification/physical security/transport security, waste management, etc.) in compliance with WHO and OIE standards. (Y2) 	Reference Only - DO NOT FILL
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42	<ul style="list-style-type: none"> • System for ensuring that lab meets fully functional biosafety conditions and best practices in place, agents are identified, licensed, transported, secured, monitored, and disposed of in a minimum number of facilities with BS&S best practices is in place. (Y5) • BS&S system evaluation conducted. (Y5) 	Reference Only - DO NOT FILL
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44	<ul style="list-style-type: none"> • University OH networks established to promote BS&S pre-service 	

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45		Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
46	Biosafety and biosecurity training and practices	Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
47		Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.
48		Level 5:Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under "Demonstrated Capacity" and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.
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51	All Other Relevant Updates	

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45	<p>training as part of OH education across stakeholder schools (SPH, MS, VS, ES). (Y1)</p> <p>Universities review existing curriculum and training strategies for BS&S across participating schools to align with OH teaching core competencies. (Y2)</p> <p>• Harmonization of the curriculum for professional training across all services (e.g., laboratory technicians at human and animal labs, physicians, hazardous waste disposal, etc.) in biosafety and biosecurity, and harmonized with WHO and OIE standards. (Y3)</p> <p>• Curriculum and training strategies for pre-service BS&S training across participating schools are aligned with OH teaching core competency needs and integrated into university programs. (Y3)</p> <p>• Pre-service laboratory workforce trained in accordance with BS&S needs. (Y5)</p> <ul style="list-style-type: none"> • Lab BS&S capacities in animal labs in accordance with OIE standards and consistent with national needs met. (Y5) • BSC Certification needs assessment conducted and approach developed. (Y3) • Each laboratory has an established point-of-contact for BS&S with established B&S program requirements. (Y4) • Routine mentoring and supervision for BS&S program developed. (Y4) 	
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49		Reference Only - DO NOT FILL
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52	Indicator and event-based systems in place SURVEILLANCE (SURV)	Level 1: No indicator or event-based surveillance systems in place
53		Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
54		Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
55		Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
56		Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
57		Level 1: No interoperable, interconnected, electronic real-time reporting system exists
58		Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
59		Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
60		Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
61		Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international

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52	<ul style="list-style-type: none"> • Capacity of current IDSR/SIMR disease surveillance system assessed. (Y1) • Implementation of IDSR/SIMR is established for all priority diseases/syndromes for indicator-based and at least 3 priority disease/syndrome for event-based public health surveillance at national level and 20% of regional health districts. (Y1) • Regional Centers for Disease Control and Prevention (CERPLE) capability is strengthened through regular trainings of staff in IDSR methodologies and migration pathways. (Y1) • Finalize a national disease plan that addresses steps for detecting, preventing and responding across GHSA tracks (e.g., a National Cholera Plan that is finalized that addresses several cutting themes GHSA). (Y1) • Capacities and gaps in current animal health surveillance system identified and plan for strengthening agreed upon with national authorities. (Y1) 	Reference Only - DO NOT FILL
53	<ul style="list-style-type: none"> • Strengthen the on-going implementation of the IDSR/SIMR framework by adding at least one additional disease/syndrome to event-based surveillance at national level and 50% of regional health districts. (Y2) 	Reference Only - DO NOT FILL
54	<ul style="list-style-type: none"> • Priority communities and geographic areas identified; community event-based surveillance initiated in these communities for at least two priority diseases/syndromes (one of which is cholera). (Y2) 	Reference Only - DO NOT FILL
55	<ul style="list-style-type: none"> • Public health agreement between Cameroon and neighboring countries for cross border public health information sharing, specimen sharing, and cross border transport. (Y2) 	Reference Only - DO NOT FILL
56	<ul style="list-style-type: none"> • OH national surveillance strategy is agreed upon by all stakeholders. (Y2) • Strengthen the on-going implementation of IDSR/SIMR for cholera and at least one additional disease/syndrome for event-based surveillance at national and 100% of regional health districts. (Y3) 	Reference Only - DO NOT FILL
57	<ul style="list-style-type: none"> • Enhance IDSR/SIMR indicator and event-based surveillance data quality (timeliness, completeness, accuracy and consistency). (Y3) • Procedures and protocols for cross-border coordination and information sharing established. (Y3) 	Reference Only - DO NOT FILL
58	<ul style="list-style-type: none"> • In-service surveillance teams trained and deployed in accordance with OH national strategy. (Y3) • Epidemiological surveillance and laboratory surveillance systems linked to improve data exchange. (Y2) 	Reference Only - DO NOT FILL
59		Reference Only - DO NOT FILL
60		Reference Only - DO NOT FILL
61		Reference Only - DO NOT FILL

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62 63 64 65 66 67 68 69	Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated	<p>Level 1: No reports related to data collection</p> <p>Level 2: Sporadic reports related to data collection with delay</p> <p>Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data</p> <p>Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data</p> <p>Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting</p>
	All Other Relevant Updates	
	Laboratory testing for detection of priority diseases	Level 1: National laboratory system is not capable of conducting any core tests
		Level 2: National laboratory system is capable of conducting 1-2 core tests
		Level 3: National laboratory system is capable of conducting 3-4 core tests
		Level 4: National laboratory system is capable of conducting five or more of the ten core tests
		Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
70	G SYSTEMS (LAB)	
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62	<ul style="list-style-type: none"> • Evidence of improved electronic surveillance data collection at community level (e.g., decreased time between detection and reporting). (Y4) • In-service surveillance teams trained and deployed in accordance with OH national strategy. (Y4) • Integrate multi-sectoral surveillance data into one resource accessible by contributing sectors for improved analysis, reporting, dissemination and decision making. (Y5) • Categorize pathogens at the animal/human interface (Y5) 	Reference Only - DO NOT FILL
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67		Reference Only - DO NOT FILL
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69	<ul style="list-style-type: none"> • Consultative Lab Technical Working Group (LTWG) established. (Y1) • Instituted quality assurance (QA) measures to the regional level of the laboratory public health system. (Y1) • Existing specimen transport networks, protocols, and diagnostics for cholera and other priority infectious diseases are assessed. (Y1) • National Public Health Laboratory (NPHL) renovation is complete. (Y1) • Animal labs identified for strengthening of diagnostic capacities against agreed upon list of priority zoonotic diseases. (Y1) • Standardization of equipment and diagnostic testing protocols to meet Quality Management Systems (QMS) across the lab tiered system is complete. (Y2) • Expansion of the NPHL capacity for coordination, specimen containment, and specimen transport networks has been initiated. (Y2) • Selected and implemented laboratory information management system (LIMS) at NPHL. (Y2) 	Reference Only - DO NOT FILL
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71	<ul style="list-style-type: none"> • NPHL will have the capacity to identify at least 3 of the 7 WHO priority AMR pathogens (as determined by the GRC) using standardized modern diagnostics. (Y2) 	
72	<ul style="list-style-type: none"> • Continued strengthening of diagnostic capacities of animal labs against agreed upon list of priority zoonotic diseases. (Y2) 	
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75	LAB STRENGTHENING	Laboratory Quality System
76		Level 1: There are no national laboratory quality standards
77		Level 2: National quality standards have been developed but there is no system for verifying their implementation
78		Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
79		Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.
80		Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.
81		All Other Relevant Updates
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83	WORKFORCE	Level 1: No health workforce strategy exists
84		Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
85		Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
86		Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
87		Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system

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75	<ul style="list-style-type: none"> • Accreditation/certification of NPHL and regional laboratories launched. (Y2) • Expansion of National Public Health Laboratory (NPHL) capacity to cover both human and key animal health disease. (Y3) • National Public Health Lab Network supporting a national policy is developed. (Y3) • National laboratory system is integrated with IDSR specifically for cholera. (Y3) • Two heavily-affected regions are able to screen, transport to regional referral laboratories for cholera confirmation. (Y3) • Supply chain management and quality assurance systems introduced in animal labs. (Y3) 	Reference Only - DO NOT FILL
76	<ul style="list-style-type: none"> • National policies and guidelines for clinical laboratories across the NPHL network are enforced. (Y4) 	Reference Only - DO NOT FILL
77	<ul style="list-style-type: none"> • Supply chain management and quality assurance systems in place. (Y4) • Accreditation/certification of NPHL and Regional laboratories has started. (Y5) 	Reference Only - DO NOT FILL
78	<ul style="list-style-type: none"> • Nationwide laboratory network formalized and established. (Y5) • Lab quality management system (QMS) and Quality Assurance towards certification across all levels of the NPHL system and in animal health labs. (Y5) 	Reference Only - DO NOT FILL
79		Reference Only - DO NOT FILL
80		Reference Only - DO NOT FILL
81		Reference Only - DO NOT FILL
82		Reference Only - DO NOT FILL
83	<ul style="list-style-type: none"> • First and second cohort of FETP Advanced identified and enrolled in training. (Y1) • Nine regional rapid intervention teams are trained in emergency preparedness. (Y1) • Assessment of the existing human resource tracking system is completed. (Y1) 	Reference Only - DO NOT FILL
84	<ul style="list-style-type: none"> • The creation of a regional ethical committee. (Y1) • Shared vision among national leadership and key stakeholders for One Health workforce needs for early detection of possible zoonotic disease threats. (Y1) 	Reference Only - DO NOT FILL
85		Reference Only - DO NOT FILL
86	<ul style="list-style-type: none"> • First cohort of FETP basic identified and enrolled in training. (Y2) • A technical working group with representation from across sectors is established to discuss workforce needs and/or how to bridge gaps. (Y2) • Develop and pilot training tools and resources and implement training for environmental health. (Y2) 	Reference Only - DO NOT FILL
87		Reference Only - DO NOT FILL

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88	WORKFORCE DEVELOPMENT	Human resources are available to implement IHR/PVS core capacity requirements	<p>Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities</p> <p>Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level</p> <p>Level 3: Multidisciplinary HR capacity is available at national and intermediate level</p> <p>Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained)</p> <p>Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally</p>
89		All Other Relevant Updates	
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96	(EOC)*	Emergency Operations Program	Level 1: No exercises have been completed
97			<p>Level 2: Table top exercise has been completed to test systems and decision making</p> <p>Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency</p>
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88	<ul style="list-style-type: none"> • Core-competencies and Composition of a one health workforce to prevent, detect, and respond to threats identified and agreed upon. (Y2) • Universities review existing pre-service education strategies across participating schools to align with OH core competencies. (Y2) • Cadres of animal and human health professionals provided in-service training in requisite one health skills. (Y2) • Leadership/management transition of the FETP program to MINSANTE is initiated. (Y3) • Environmental training program is adopted. (Y3) • Encourage the harmonization of national policies and regulations for One health workforce Core-competencies and Composition. (Y3) • FETP Basic trainings conducted at regular interval. (Y4) • FETP Advanced trainings are conducted at regular intervals. (Y4) • Curriculum and training strategies for pre-service across participating schools are aligned with OH teaching core competency needs and integrated into university programs. (Y4) • Animal and human health professionals provided in-service training in requisite one health skills. (Y4) 	Reference Only - DO NOT FILL
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90	<ul style="list-style-type: none"> • FETP basic and advance students (both current and graduates) fully integrated into disease response activities. (Y5) • 300 epidemiologist trained in FETP Basic. (Y5) • 54 epidemiologist enrolled or graduated in FETP Advanced. (Y5) • Rollout of OH Education across participating schools ongoing. (Y5) • Animal and human health professionals provided in-service training in requisite one health skills. (Y5) 	
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93		Reference Only - DO NOT FILL
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96	<ul style="list-style-type: none"> • Public health emergency management authority to the MINSANTE Emergency Operations Center (EOC) policy established. (Y1) • MINSANTE EOC design completed. (Y1) • Multi-sectoral Risk communications strategy for public health emergency events developed. (Y1) 	Reference Only - DO NOT FILL
97	<ul style="list-style-type: none"> • Enrollment into Public Health Emergency Management Fellowship program. (Y1) • Initial assessment of rapid response capability conducted for cholera and other priority diseases. (Y1) • Public health threat and hazard identification and risk assessment (THIRA). (Y1) • An outline of the operational plans for the MINSANTE EOC is 	Reference Only - DO NOT FILL
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99		Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
100		Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place
101		Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)
102		Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
103	Emergency Operations Centre Operating Procedures and Plans	Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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110	All Other Relevant Updates	
110	**Adjustment has been made to the standard JEE language to reflect multisectoral	

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99	<p>developed. (Y1)</p> <ul style="list-style-type: none"> • National capacity for disaster preparedness strengthened. (Y1) • One Health preparedness framework for a multi-sectoral rapid response capabilities in EOCs developed. (Y1) 	
100	<ul style="list-style-type: none"> • National capacity for One Health preparedness in place. (Y5) 	
101	<ul style="list-style-type: none"> • Encourage the development of Policies, Plans, protocols and SOPs. (Y2) • Construction and equipping of MINSANTE EOC is completed. (Y2) • The operational plans for the MINSANTE EOC is completed. (Y2) • One Health preparedness framework for a multi-sectoral rapid response to reports of disease outbreaks implemented. (Y2) 	
102	<ul style="list-style-type: none"> • Training of staff on incident management through the MINSANTE EOC is conducted. (Y3) 	
103	<ul style="list-style-type: none"> • MINSANTE EOC plans and procedures are exercised. (Y3) • Linkages established for disease surveillance to feed into MINSANTE EOC database. (Y3) 	
104	<ul style="list-style-type: none"> • Test, validate, and improve MINSANTE EOC plans and procedures. (Y4) • FETP graduates incorporated into EOC staff planning and activities. (Y4) • Sustained OH preparedness for multi-sectoral rapid response to reports of disease outbreaks. (Y4) 	
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106		Reference Only - DO NOT FILL
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110	, OH aspect of EPT.	

	A	B	C
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2	GHSA Action Package Indicators	Indicator Capacity Levels	
ZOONOTIC DISEASE (ZD)	Surveillance systems in place for priority zoonotic diseases and pathogens	<p>Level 1: No mechanism in place</p>	
		<p>Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place</p>	
		<p>Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern</p>	
		<p>Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern</p>	
		<p>Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement</p>	
		<p>Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.</p>	
		<p>Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.</p>	
	One Health Workforce** (Veterinary or Animal Health Workforce)	<p>Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.</p>	
		<p>Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.</p>	
		<p>Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing</p>	
		<p>Level 1: No mechanism in place</p>	
	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional	<p>Level 2: National policy, strategy or plan for the response to zoonotic events is in place</p>	
		<p>Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is</p>	

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2	GHSA 5-Year Country Roadmap Milestones	Key Results
3	<ul style="list-style-type: none"> • National prioritization of zoonotic diseases. (Y1-Y2) • High-risk human/animal interfaces (i.e. “value chains” land-use change, etc.) mapped. (Y1-Y2) • High-risk “nodes” for spillover of zoonotic threats and the behaviors and practices that enable spillover identified upon completion of mapping in year 1. (Y3) 	Reference Only - DO NOT FILL
4	<ul style="list-style-type: none"> • Surveillance systems for at least two of the five prioritized zoonoses are established to detect spillover at sentinel sites based on previously identified “nodes”. (Y4) 	Reference Only - DO NOT FILL
5	<ul style="list-style-type: none"> • Surveillance systems for all five prioritized zoonoses are established to detect spillover at sentinel sites based on previously identified “nodes”. (Y5) 	Reference Only - DO NOT FILL
6	<ul style="list-style-type: none"> • Package of One Health “risk reduction” measures targeting high-risk practices and behaviors that enable spillover evaluated for scale up.(Y5) 	Reference Only - DO NOT FILL
7	<ul style="list-style-type: none"> • One-Health Stakeholders strategically identified and a mechanism for multisectoral coordination established, aligned with a common mission statement. (Y1-Y2) 	Reference Only - DO NOT FILL
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13	<ul style="list-style-type: none"> • Plan completed for institutionalizing a national multi-sectoral coordination mechanism. (Y4) • Implement current policies regarding livestock practices with host government. (Y3) 	Reference Only - DO NOT FILL
14	<ul style="list-style-type: none"> • Plan implemented to institutionalize a national multi-sectoral coordination mechanism, addressing policy and operational needs. (Y5) 	Reference Only - DO NOT FILL
15	<ul style="list-style-type: none"> • Package of One Health “risk reduction” measures targeting high-risk practices and behaviors that enable spillover implemented at “nodes” identified. (Y5) 	Reference Only - DO NOT FILL

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16	All Other Relevant Updates	Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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21	Antimicrobial resistance (AMR) detection	Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
22		Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
23		Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
24		Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
25		Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
26	Surveillance of infections caused by AMR pathogens	Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved
27		Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved
28		Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens
29		Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year
30		Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement

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20		Reference Only - DO NOT FILL
21	<ul style="list-style-type: none"> • National Technical Working Group (TWG) established around One-Health concept to coordinate, monitor and implement AMR activities. (Y1-Y2) • Gaps in surveillance and diagnostic capacity for Antimicrobial Resistance (AMR) identified. (Y1-Y2) • Baseline established for Infection Prevention & Control (IPC) practices, Water, Sanitation and Hygiene (WASH) infrastructure, and waste management in priority animal and human health facilities. Point-prevalence of health care- associated infections assessed and documented. (Y3) 	Reference Only - DO NOT FILL
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26	<ul style="list-style-type: none"> • Reporting of AMR results to national and multinational information/surveillance systems initiated. (Y3) • Multisectoral National AMR Policy and Strategy developed for addressing healthcare-associated infections (HAI) and antimicrobial resistance (AMR) affecting animal, human, and environmental health. (Y4) • IPC supplies consistently available in targeted healthcare facilities (via functional WASH infrastructure and reliable commodity procurement). (Y4) 	Reference Only - DO NOT FILL
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28	<ul style="list-style-type: none"> • Evaluation conducted on antibiotic pathways/presence in human, animal, environmental fora. (Y4) • System to track antimicrobial usage is implemented. (Y5) 	Reference Only - DO NOT FILL
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31	ANTIMICROBIAL STEWARDSHIP	Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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39	BIOSAFETY AND BIOSECURITY SYSTEM	Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities. Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities. Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
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45		Level 1: No BSS training or plans are in place Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.

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31	<ul style="list-style-type: none"> • Implementation of the national AMR policy and strategy for animal and human health at several HAI/AMR pilot sites. (Y5) • IPC supplies universally available in healthcare facilities (via functional WASH infrastructure and reliable commodity procurement). (Y5) • AMR Stewardship program established to promote conservation of existing treatments, preventative measures and rapid point of care diagnostics. (Y5) 	Reference Only - DO NOT FILL
32	<ul style="list-style-type: none"> • National Implementation of the AMR policy and strategy for animal and human health, including legislative and regulatory framework for the prescription, use and traceability of antibiotics. (Y5) 	Reference Only - DO NOT FILL
33	<ul style="list-style-type: none"> • Established national laboratory database and data management system for AMR. (Y5) 	Reference Only - DO NOT FILL
34		Reference Only - DO NOT FILL
35		Reference Only - DO NOT FILL
36		Reference Only - DO NOT FILL
37		Reference Only - DO NOT FILL
38		Reference Only - DO NOT FILL
39	<ul style="list-style-type: none"> • Baseline BS+S assessment for humans, animal, environmental health systems, including sample transport system, and dangerous pathogens inventory conducted. (Y1-Y2) • Classification system established for pathogens and level of BS+S capacity, equipment and infrastructure in labs. (Y3) 	Reference Only - DO NOT FILL
40	<ul style="list-style-type: none"> • Contextualize international BS+S standards across human and animal labs. (Y3) 	Reference Only - DO NOT FILL
41	<ul style="list-style-type: none"> • Rapid and culture-free diagnostic practices initiated at targeted sites. (Y3) • National Bio-risk Office established as the focal point for the biosecurity and biosafety program. (Y3) 	Reference Only - DO NOT FILL
42	<ul style="list-style-type: none"> • Institutionalization of national plan, legislation, policies and procedures/guidelines based on BS+S and Biorisk Management methodologies. (Y4) 	Reference Only - DO NOT FILL
43		Reference Only - DO NOT FILL
44	<ul style="list-style-type: none"> • System for reporting BS+S failures established National Bio-risk office authorized to administer and enforce BS&S oversight systems. (Y4) • Pathogen classification system reviewed and evaluated. (Y5) • Lab BS&S infrastructure upgraded in compliance with international standards. (Y5) • Laboratory facilities secured using sustainable bio-risk design, methods and technologies. (Y5) 	DO NOT FILL
45	<ul style="list-style-type: none"> • Establish specimen referral network National consolidation of especially 	DO NOT FILL

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46	BIOSAFETY AND BIOTERRORISM	Biosafety and biosecurity training and practices	<p>Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.</p> <p>Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.</p> <p>Level 5:Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.</p>
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51		All Other Relevant Updates	
52	Indicator and event-based systems in place		Level 1: No indicator or event-based surveillance systems in place
53			Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
54			Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
55			Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
56			Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
57			Level 1: No interoperable, interconnected, electronic real-time reporting system exists

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46	dangerous pathogens. (Y5)	
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49		Reference Only - DO NOT FILL
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52	<ul style="list-style-type: none"> • Existing surveillance system evaluated to determine capacity to detect events of significance for public health, animal health and health security. (Y1-Y2) • Develop a national surveillance strategy for addressing animal, human, environmental health across multiple cross-cutting technical areas. (Y3) • Expand routine surveillance at points of entry to include maritime and land borders. (Y3) 	
53	<ul style="list-style-type: none"> • Syndromic, early-warning, and/or event based surveillance system across human, animal and environmental health established and functional. (Y4) 	
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57	<ul style="list-style-type: none"> • Public health agreements between Côte d'Ivoire and neighboring countries for cross-border information exchange, specimen sharing, and 	

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58	SURVEILLANCE (SURV)	Surveillance is an interoperable, interconnected, electric real-time reporting system	Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time. Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international
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62		Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated	Level 1: No reports related to data collection Level 2: Sporadic reports related to data collection with delay Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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68		All Other Relevant Updates	
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58	<p>cross-border transport developed. (Y4)</p> <ul style="list-style-type: none"> • Data sources from disease surveillance, laboratory information systems and Emergency Management integrated to form real-time linkages and tiered information flow. (Y5) 	
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67	<ul style="list-style-type: none"> • Côte d'Ivoire is in compliance with IHR, international best practices and agreements. (Y5) 	Reference Only - DO NOT FILL
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70 71 72 73 74 75 76 77 78 79 80 81 82	Laboratory testing for detection of priority diseases	Level 1: National laboratory system is not capable of conducting any core tests
		Level 2: National laboratory system is capable of conducting 1-2 core tests
		Level 3: National laboratory system is capable of conducting 3-4 core tests
		Level 4: National laboratory system is capable of conducting five or more of the ten core tests
		Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
	Laboratory Quality System	
		Level 1: There are no national laboratory quality standards
		Level 2: National quality standards have been developed but there is no system for verifying their implementation
		Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
		Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.
	All Other Relevant Updates	

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70	<ul style="list-style-type: none"> • Assessment and prioritization of critical gaps in the SOPs, procedures, and quality practices of the NPHL system. (Y1-Y2) • Assessment and prioritization of the critical gaps in the legal and regulatory frameworks (Y1-Y2) • Lab-specific multi-hazard SOPs and protocols, including AMR, Zoonotics, assessed and developed. (Y1-Y2) • Interministerial National Laboratory Network formalized (including review and update of national strategy). (Y1-Y2) • Labs identified for strengthening of diagnostic capacities against agreed upon list of priority zoonotic diseases. (Y1-Y2) • National laboratory strategy, including AMR, Zoonotics, Immunization updated and finalized. (Y3) 	Reference Only - DO NOT FILL
71	<ul style="list-style-type: none"> • Multi-tiered reporting system to ensure timely delivery of diagnostic results and surveillance data developed. (Y3) 	Reference Only - DO NOT FILL
72	<ul style="list-style-type: none"> • Laboratory technical capacity building for testing and reporting at all levels of the public health system is evaluated, including AMR and Zoonotics. (Y5) 	Reference Only - DO NOT FILL
73		Reference Only - DO NOT FILL
74		Reference Only - DO NOT FILL
75	<ul style="list-style-type: none"> • Accreditation of NPHL and Regional laboratories. (Y5) • Establishment of a national organizational infrastructure to develop and implement quality standards and guidelines for clinical, veterinary and environmental testing and referral. (Y3) • In-country mechanism and cadre of Biosafety cabinet certification personnel established. (Y3) • Continued strengthening of diagnostic capacities of labs against agreed upon list of priority zoonotic diseases. (Y3) • Availability of appropriate laboratory services ensured (including tiered referral system, point of care). (Y4) • Established laboratory information system and protocols to link laboratory information and epidemiological surveillance systems. (Y4) 	Reference Only - DO NOT FILL
76	<ul style="list-style-type: none"> • Supply chain management and quality assurance systems introduced. (Y4) 	Reference Only - DO NOT FILL
77	<ul style="list-style-type: none"> • Lab information management and supply chain management (including electronic inventory system, planning, forecasting, warehouse, distribution) systems established. (Y5) 	Reference Only - DO NOT FILL
78	<ul style="list-style-type: none"> • Expansion of Lab quality management system (QMS) and strengthen laboratory management towards accreditation (SLMTA). (Y5) 	Reference Only - DO NOT FILL
79	<ul style="list-style-type: none"> • Supply chain management and quality assurance systems in place. (Y5) • Sustainability plan for lab commodities and maintenance developed. (Y5) 	Reference Only - DO NOT FILL
80		Reference Only - DO NOT FILL
81		Reference Only - DO NOT FILL
82		Reference Only - DO NOT FILL

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83	Workforce strategy		Level 1: No health workforce strategy exists
84			Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
85			Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
86			Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
87			Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
88	Human resources are available to implement IHR/PVS core capacity requirements		Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities
89			Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level
90			Level 3: Multidisciplinary HR capacity is available at national and intermediate level
91			Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained
92			Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
93	All Other Relevant Updates		
94			Level 1: No exercises have been completed
95			Level 2: Table top exercise has been completed to test systems and decision making
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83	<ul style="list-style-type: none"> • Establish basic Field Epidemiology Training Program (FETP) and long-term buy-in on MoH- owned tiered FETP. (Y1-Y2) • One Health Workforce structure, as part of the multisectoral coordination mechanism, established. (Y1-Y2) 	Reference Only - DO NOT FILL
84	<ul style="list-style-type: none"> • Workforce training needs assessment (including One Health) conducted to establish multisectoral emergency outbreak capacities. (Y3) • FETP Basic and Advanced (Years 1-5) implemented; initial inclusion of Lab and Zoonotic elements into training. (Y3) 	Reference Only - DO NOT FILL
85	<ul style="list-style-type: none"> • Core-competencies and Composition of a one health workforce to prevent, detect, and respond to threats identified and agreed upon. (Y3) 	Reference Only - DO NOT FILL
86		Reference Only - DO NOT FILL
87		Reference Only - DO NOT FILL
88	<ul style="list-style-type: none"> • Cadres of animal and human health professionals provided in-service training in requisite one health skills. (Y3) • FETP Basic and Advanced (Years 1-5) implemented, including support for regional epidemiology and laboratory component (FELTP). (Y4) • National policies and regulations for One health workforce Core-competencies and Composition harmonized. (Y4) 	Reference Only - DO NOT FILL
89	<ul style="list-style-type: none"> • Animal and human health professionals provided in-service training in requisite one health skills. (Y4) 	Reference Only - DO NOT FILL
90	<ul style="list-style-type: none"> • Cadre of clinic care providers (physicians, nurses) trained in bio-surveillance and sentinel surveillance established. (Y5) • FETP Basic and Advanced (Years 1-5) implemented, including support for regional epidemiology. (Y5) • OH workforce has been trained in accordance with national OH disease "detection" needs. (Y5) 	Reference Only - DO NOT FILL
91		Reference Only - DO NOT FILL
92		Reference Only - DO NOT FILL
93		Reference Only - DO NOT FILL
94		Reference Only - DO NOT FILL
95		Reference Only - DO NOT FILL
96	<ul style="list-style-type: none"> • A national strategy for preparedness and response is developed, that includes risk communications, emergency operations system design, emergency management, and a One Health approach. (Y1-Y2) • The first cohort of staff is identified and trained on core emergency 	Reference Only - DO NOT FILL
97		Reference Only - DO NOT FILL

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98	Emergency Operations Program	Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
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101		Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance) Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
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103	Emergency Operations Centre Operating Procedures and Plans	Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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110	**Adjustment has been made to the standard JEE language to reflect multisectoral	

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98	management competencies. (Y1-Y2) • Complete the renovation, construction and equipping of MOPH EOC. (Y3)	
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101	• Multi-sectoral national health incident management authorities and responsibilities are designated, inclusive of human, animal, and environmental health incidents. (Y3) • Core EOC staff and multi-sectoral rapid response teams have tested, validated, and simulated incident management systems, (Y4) • Functional real-time links established between the EOC and respective biosurveillance and information systems. (Y5) • Evaluation of EOC functionality against GHSA 5- year target and first year national strategy documents. (Y5)	Reference Only - DO NOT FILL
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106		Reference Only - DO NOT FILL
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110	, OH aspect of EPT.	

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2	GHSA Action Package Indicators	Indicator Capacity Levels	
ZOONOTIC DISEASE (ZD)	Surveillance systems in place for priority zoonotic diseases and pathogens	<p>Level 1: No mechanism in place</p>	
		<p>Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place</p>	
		<p>Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern</p>	
		<p>Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern</p>	
		<p>Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement</p>	
		<p>Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.</p>	
		<p>Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.</p>	
	One Health Workforce** (Veterinary or Animal Health Workforce)	<p>Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.</p>	
		<p>Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.</p>	
		<p>Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing</p>	
		<p>Level 1: No mechanism in place</p>	
	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional	<p>Level 2: National policy, strategy or plan for the response to zoonotic events is in place</p>	
		<p>Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is</p>	

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2	GHSA 5-Year Country Roadmap Milestones	Key Results
3	Currently in development.	Reference Only - DO NOT FILL
4		Reference Only - DO NOT FILL
5		Reference Only - DO NOT FILL
6		Reference Only - DO NOT FILL
7	Currently in development.	Reference Only - DO NOT FILL
8		Reference Only - DO NOT FILL
9		Reference Only - DO NOT FILL
10		Reference Only - DO NOT FILL
11		Reference Only - DO NOT FILL
12	Currently in development.	Reference Only - DO NOT FILL
13		Reference Only - DO NOT FILL
14		Reference Only - DO NOT FILL
15		Reference Only - DO NOT FILL

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16	All Other Relevant Updates	Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
17		
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21	Antimicrobial resistance (AMR) detection	Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
22		Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
23		Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
24		Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
25		Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
26	Surveillance of infections caused by AMR pathogens	Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved
27		Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved
28		Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens
29		Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year
30		Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement

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18		Reference Only - DO NOT FILL
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20	Currently in development.	
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25	Currently in development.	
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31	ANTIMICROBIAL STEWARDSHIP	Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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38		All Other Relevant Updates
39	BIOSAFETY AND BIOSECURITY SYSTEM	Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities. Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities. Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
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44		Level 1: No BSS training or plans are in place Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
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31	Currently in development.	Reference Only - DO NOT FILL
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36		Reference Only - DO NOT FILL
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39	Currently in development.	Reference Only - DO NOT FILL
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44	Currently in development.	DO NOT FILL
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46	BIOSAFETY AND BIOTECHNOLOGY	Biosafety and biosecurity training and practices	<p>Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.</p> <p>Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.</p> <p>Level 5: Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under "Demonstrated Capacity" and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually. Training on emergency response procedures provided annually.</p>
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51		All Other Relevant Updates	
52	Indicator and event-based systems in place		Level 1: No indicator or event-based surveillance systems in place
53			Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
54			Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
55			Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
56			Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
57			Level 1: No interoperable, interconnected, electronic real-time reporting system exists

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49		Reference Only - DO NOT FILL
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52	Currently in development.	
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57	Currently in development.	

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58	SURVEILLANCE (SURV)	Surveillance is an interoperable, interconnected, electric real-time reporting system	Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time. Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international
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62		Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated	Level 1: No reports related to data collection Level 2: Sporadic reports related to data collection with delay Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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68		All Other Relevant Updates	
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70	(B)	Laboratory testing for detection of priority	Level 1: National laboratory system is not capable of conducting any core tests

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61	Currently in development.	
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70	Currently in development.	Only - DO NOT FILL

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71	LAB STRENGTHENING SYSTEMS (LA)	diseases Level 2: National laboratory system is capable of conducting 1-2 core tests Level 3: National laboratory system is capable of conducting 3-4 core tests Level 4: National laboratory system is capable of conducting five or more of the ten core tests Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
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75	Laboratory Quality System	Level 1: There are no national laboratory quality standards Level 2: National quality standards have been developed but there is no system for verifying their implementation Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories. Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required. Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.
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80	All Other Relevant Updates	
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83	WORKFORCE DEVELOPMENT (WD)	Level 1: No health workforce strategy exists
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85	Workforce strategy	Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians) Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
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83	Currently in development.	
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88	WORKFORCE DEVELOPMENT	Human resources are available to implement IHR/PVS core capacity requirements	<p>Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities</p> <p>Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level</p> <p>Level 3: Multidisciplinary HR capacity is available at national and intermediate level</p> <p>Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained)</p> <p>Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally</p>
89		All Other Relevant Updates	
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96	OPERATIONS CENTER (EOC)*	Emergency Operations Program	<p>Level 1: No exercises have been completed</p> <p>Level 2: Table top exercise has been completed to test systems and decision making</p> <p>Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency</p> <p>Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions</p> <p>Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented</p>
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101			<p>Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place</p> <p>Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)</p>
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88	Currently in development.	Reference Only - DO NOT FILL
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96	Currently in development.	Reference Only - DO NOT FILL
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101	Currently in development.	DO NOT FILL
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103	EMERGENCY	Emergency Operations Centre Operating Procedures and Plans	<p>Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison</p> <p>Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions</p> <p>Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources</p>
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107		All Other Relevant Updates	
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110		**Adjustment has been made to the standard JEE language to reflect multisectoral	

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2	GHSA Action Package Indicators	Indicator Capacity Levels	
3	ZOONOTIC DISEASE (ZD)	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place
4			Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place
5			Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern
6			Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern
7			Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement
8			Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.
9		One Health Workforce** (Veterinary or Animal Health Workforce)	Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.
10			Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
11			Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
12			Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing

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2	GHSA 5-Year Country Roadmap Milestones	Key Results
3	1. Initial framework and standardized data collection protocols for high risk zoonotic diseases developed. (Y1) 2. Networks for zoonotic disease reporting mapped. (Y1) 3. Data collection and improved capacity to conduct diagnostic surveillance in wildlife for Ebola and other high-consequence pathogens. (Y1) 4. Review of current animal production and marketing policies initiated. (Y1) 5. High-risk "nodes" for spillover of zoonotic threats identified. (Y2) 6. Behavior and practices that enable spillover identified. (Y2) 7. System for sampling and testing wildlife, livestock, and humans to better define risk from selected zoonotic pathogens in animal reservoirs and disease vectors implemented. (Y2) 8. System for sampling and testing wildlife, livestock, and humans evaluated. (Y3)	Reference Only - DO NOT FILL
4	9. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover validated. (Y3)	
5	10. Policy, organizational and operational needs for multi-sectoral coordination mechanism established for sustainability. (Y3)	
6	11. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover implemented. (Y4)	
7	12. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover sustained. (Y5)	
8	1. Capacity of animal health professionals to determine risk based on epidemiology and modeling/analytics demonstrated. (Y4) 2. One Health workforce trained in accordance with national zoonotic disease prevention needs. (Y5)	
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13	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 1: No mechanism in place
14			Level 2: National policy, strategy or plan for the response to zoonotic events is in place
15			Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is
16			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
17			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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21	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
22			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
23			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
24			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
25			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
26	STANCE (AMR)		Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved

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13	1. Multi-sectoral coordination mechanism for zoonotic disease prevention established. (Y1) 2. Coordination mechanism that enables cross-sectors/ministries to collaborate routinely for zoonotic disease prevention continued. (Y5)	Reference Only - DO NOT FILL
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21	1. National IPC Policy and strategic plan developed by Ministry of Health. (Y1) 2. Ministry of Health has a clear structure for implementing IPC program. (Y1) 3. All National and prefectural hospitals have functioning hygiene committees. (Y1) 4. IPC standard operating procedures validated. (Y1) 5. IPC focal persons received appropriate training to perform the IPC related practices. (Y2)	Reference Only - DO NOT FILL
22	6. All national and prefectural hospitals have operationalized an IPC program. (Y2)	
23	7. National and regional reference laboratories assessed. (Y2)	
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25	1. IPC practices in priority hospitals assessed and results presented. (Y3) 2. National and regional reference laboratories have capacity to test and report three WHO priority AMR pathogens. (Y3) 3. HAI and AMR surveillance protocol adapted. (Y4) 4. Microbiology laboratories assessed and selected for AMR/HAI surveillance. (Y4) 5. HAI/AMR surveillance or point-prevalence survey initiated. (Y4)	Reference Only - DO NOT FILL
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27	ANTIMICROBIAL RESISTANCE	Surveillance of infections caused by AMR pathogens	Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
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32		Antimicrobial stewardship activities	Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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37		All Other Relevant Updates	
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39	Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities		Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities. Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.
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30	<p>1. Policy and Strategic Plan for AMR drafted. (Y3)</p> <p>2. Lab management information system activities initiated. (Y3)</p> <p>3. Capacity for Hospital Related Infections (HAI) and AMR surveillance assessed. (Y4)</p> <p>4. IPC programs evaluated and recommendations for improvement presented to Ministry of Health, Ministry of Livestock and partners. (Y5)</p> <p>5. National Strategic Plan revised and distributed. (Y5)</p> <p>6. IPC guidelines revised IPC. (Y5)</p>	Reference Only - DO NOT FILL
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36		Reference Only - DO NOT FILL
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39	<p>1. Dangerous pathogens for animal and human health identified, documented, and destroyed or stored in a regional repository (e.g. biobank). (Y1)</p> <p>2. Capacities in Biosafety and Biosecurity (BSS) among key laboratories assessed. (Y1)</p>	Reference Only - DO NOT FILL
40	<p>3. Security of dangerous pathogen, including Ebola, samples strengthened from the point of collection to the point of disposal or storage within a regional repository. (Y1)</p> <p>4. Comprehensive policy and mechanisms established for specimen tracking, transport, and destruction. (Y1)</p>	Reference Only - DO NOT FILL
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42	<p>5. Assessment of BSS requirements at key One Health laboratories and in the field conducted (Y2)</p>	Reference Only - DO NOT FILL

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43	BIOSAFETY AND BIOSECURITY (BSS)	Biosafety and biosecurity training and practices	Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
44			Level 1: No BSS training or plans are in place
45			Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
46			Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
47			Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.
48			Level 5:Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.
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51		All Other Relevant Updates	

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44	<p>1. Professional training with pre-existing/new BSS curricula (i.e. laboratory technicians, physicians, hazardous waste disposal technicians, etc.) harmonized in compliance with WHO and OIE standards. (Y3)</p> <p>2. System for ensuring One Health lab islabs are functional and responds to norms of biosafety and biosecurity conditions and best practices is in place . (Y4)</p> <p>3. BSS system evaluation conducted. (Y5)</p>	Reference Only - DO NOT FILL	
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49	1. BSS capacities in animal and human health labs meet the GHSA	Reference Only - DO NOT FILL	
50	targets, as well as IHR and PVS standards. (Y5)		
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52		Level 1: No indicator or event-based surveillance systems in place
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56		Level 2: Indicator and event-based surveillance system(s) planned to begin within a year Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
57		Level 1: No interoperable, interconnected, electronic real-time reporting system exists Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
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	1. Capacities and gaps of IDSR and electronic disease surveillance systems assessed (both human and animal health). (Y1) 2. IDSR activities for investigation and response to public health events (eg outbreaks/epidemics) strengthened. (Y1) 3. Interoperable electronic reporting for IDSR implemented in pilot sites. (Y1) 4. Strategies for community event based surveillance (CBS) established (both human and animal health). (Y1) 5. Public health emergency plans and standard operational procedures developed for all Ports/Points of Entry (POEs). (Y1) 6. IHR compliance assessed. (Y1) 1. Routine standardized IDSR capacity strengthened. (Y2) 2. Interoperable electronic reporting for IDSR expanded. (Y2) 3. Medical and surveillance officers trained in IDSR. (Y2) 4. Community event based surveillance system implemented (both animal and human health) including priority border areas. (Y2) 5. Public health data exchange/sharing agreement between Guinea and neighboring countries for cross-border information sharing developed and implemented. (Y2) 6. Plan has been developed for strengthening animal health surveillance in accordance with One Health and is implemented at select target facilities. (Y2) 7. IT staff hired. (Y2) 8. Development start, and software implemented in 5/38 prefectures for 1 or 2 diseases. (Y2) 52 9. Identified gaps from the IT/Informatics assessment to be addressed- Train users. (Y2)	Reference Only - DO NOT FILL
53	10. Funds to address the gaps in the IT/Informatics assessment secured. (Y2)	DO NOT FILL
54	1. Laboratory surveillance data integrated in routine reporting system. (Y3) 2. Timely and complete surveillance data reported for all IDSR priority diseases. (Y3) 55 3. Medical and surveillance officers trained in IDSR. (Y3) 4. In-service surveillance teams trained and deployed in accordance with One Health surveillance strategy. (Y3) 56 5. Port of Entry (seaports and select major land borders) assessed for IHR	DO NOT FILL
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59	SUR	Surveillance is an interoperable, interconnected, electric real-time reporting system	<p>Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.</p> <p>Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government</p> <p>Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international</p>
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62		Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated	<p>Level 1: No reports related to data collection</p> <p>Level 2: Sporadic reports related to data collection with delay</p> <p>Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data</p> <p>Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data</p> <p>Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting</p>
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68		All Other Relevant Updates	
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70	AB)	Laboratory testing for detection of priority diseases	<p>Level 1: National laboratory system is not capable of conducting any core tests</p>
71			<p>Level 2: National laboratory system is capable of conducting 1-2 core tests</p>

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67		Reference Only - DO NOT FILL
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70	1. Mapping of multi-sectoral laboratory capacity including pathogen testing completed. (Y1) 2. Priority pathogens and diseases identified (including zoonotic diseases) and diagnostic testing capacity improved. (Y1) 3. Multi-sectoral nation-wide Laboratory strategic plan and policy established. (Y1) 4. Plans to reinforce quality assurance are integrated into the strategic plan and policy. (Y1) 5. National and/or international referral network system evaluated and reinforced. (Y1)	Reference Only - DO NOT FILL
71	6. Capacity of laboratory personnel strengthened through mentoring and	Only - DO NOT FILL

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72	LAB STRENGTHENING SYSTEMS (LSS)	Laboratory Quality System	Level 3: National laboratory system is capable of conducting 3-4 core tests Level 4: National laboratory system is capable of conducting five or more of the ten core tests Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
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75			Level 1: There are no national laboratory quality standards Level 2: National quality standards have been developed but there is no system for verifying their implementation Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
76			Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required. Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.
77		All Other Relevant Updates	
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80	WORKFORCE DEVELOPMENT (WFD)	Workforce strategy	Level 1: No health workforce strategy exists
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83			Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
84			Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
85			Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
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72	provision of technical and management laboratory trainings. (Y1) 7. Testing capacity for select priority diseases established. (Y1)	
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75	1. Nationwide tiered laboratory network needs identified (animal and human health labs). (Y2) 2. National laboratory strategic plan and policy reviewed/updated with action items for broad-based capacity building. (Y2) 3. Lab quality management system (QMS) and Quality Assurance plan in place. (Y3) 4. Diagnostic testing implemented and optimized for viral pathogens in wildlife, livestock, and humans. (Y3)	
76	5. Technical and management laboratory training expanded. (Y3-Y5) 6. Accreditation/certification of regional laboratories in-process. (Y5)	
77	7. Strengthened laboratory workforce through provision of technical and management laboratory training. (Y4)	
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79	1. National One Health laboratory strategic plan and policy operationalized. (Y4) 2. Established Laboratory Information Management System (LIMS). (Y4)	Reference Only - DO NOT FILL
80	3. Evidence of increased capacity in laboratory staff in risk characterization and bioinformatics. (Y5)	
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82	1. Capacity of human resource requirements for IHR, OIE and FAO evaluated. (Y1) 2. Strategy for multisector, tiered human resource development established and agreed upon by the technical working group. (Y1)	
83	3. Participation in the regional Field Epidemiology Training Program (FETP) increased. (Y1)	
84	4. The shared vision among national leadership and key stakeholders for animal health workforce for early detection of possible zoonotic disease is evaluated. (Y1)	
85	5. In-service training opportunities related to surveillance, research, and lab testing identified. (Y1)	
86	6. Training plan for first tier human resource development completed. (Y1) 7. Policy for multisector tiered human resource development established	

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87	WORKFORCE DEVELOPMENT	Human resources are available to implement IHR/PVS core capacity requirements	Level 5: "Demonstrated Capacity" has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
88			Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities
89			Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level
90			Level 3: Multidisciplinary HR capacity is available at national and intermediate level
91			Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained)
92			Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
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96	EMERGENCY OPERATIONS CENTER (EOC)*	Emergency Operations Program	Level 1: No exercises have been completed
97			Level 2: Table top exercise has been completed to test systems and decision making
98			Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency
99			Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions
100			Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
101			Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place

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87	<p>and agreed upon by the technical working group. (Y2)</p> <p>8. One Health workforce has been trained in accordance with national One Health disease “detection” needs. (Y5)</p>	
88	<p>1. In-service training opportunities related to surveillance, research, and lab testing formalized. (Y2)</p> <p>2. At least one first tier training cohort completed for key regions and prefectures. (Y2)</p> <p>3. Training plan for second tier human resource development completed. (Y2)</p>	
89	<p>4. At least one second tier training cohort completed for key regions and prefectures. (Y3)</p>	
90	<p>5. Training plan for third tier human resource development completed. (Y3)</p>	
91	<p>6. At least one third tier training cohort completed for key regions and prefectures. (Y4)</p> <p>7. Human resources development to meet IHR, OIE and FAO requirement is sustainable by the Government with technical support from partners. (Y5)</p>	
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93		Reference Only - DO NOT FILL
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96	<p>1. Emergency management regulations assessed and revised to provide national legal framework for emergency response. (Y1)</p> <p>2. Emergency operations workforce and training curriculum assessed. (Y1)</p>	
97	<p>3. First cohort of emergency operations workforce trained. (Y1)</p> <p>4. National emergency operations plan developed. (Y1)</p> <p>5. EOC infrastructure established and/or strengthened. (Y1)</p> <p>6. Enhance whole-of-government disaster planning and management for all hazards. (Y1)</p>	
98	<p>1. Prefectural Emergency operations plan developed. (Y2)</p> <p>2. Standard operating procedures at national and prefectural level developed. (Y2)</p> <p>3. Systems linking surveillance and laboratory systems to EOC established. (Y2)</p>	
99	<p>4. First cohort of emergency operations workforce rendered operational. (Y2)</p>	
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101	<p>1. Emergency response simulations or actual response used to evaluate EOC capacity. (Y2)</p>	

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102	EMERGENCY OPERATIONS CENTRE	Emergency Operations Centre Operating Procedures and Plans	Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)
103			Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
104			Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions
105			Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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110		**Adjustment has been made to the standard JEE language to reflect multisectoral	

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102	2. EOC plans and procedures revised to include links to other EOCs of the region. (Y3) 3. Actual responses evaluated in after-action analysis. (Y3) 4. Additional training in Emergency Management for key staff/leadership provided. (Y3) 5. Routine training program established. (Y3) 6. Revised plans and procedures tested through exercise and response. (Y4) 7. Plans with disease and event-specific annexes completed. (Y4)	
103	8. Infrastructural assessment and sustainable support identified. (Y4) 9. System, staffing, and infrastructure capacity and needs assessed. (Y5) 10. Simulation exercise program established. (Y5) 11. Plans and procedures from diverse ministries coordinated. (Y5)	
104	12. Database of communication messages created. (Y5)	
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106		Reference Only - DO NOT FILL
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110	, OH aspect of EPT.	

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2	GHSA Action Package Indicators	Indicator Capacity Levels	
3	ZOONOTIC DISEASE (ZD)	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place
4			Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place
5			Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern
6			Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern
7			Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement
8		One Health Workforce** (Veterinary or Animal Health Workforce)	Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.
9			Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.
10			Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
11			Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
12			Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing
13			Level 1: No mechanism in place
14			Level 2: National policy, strategy or plan for the response to zoonotic events is in place
	Mechanisms for responding to infectious		

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2	GHSA 5-Year Country Roadmap Milestones	Key Results
3	1. Surveillance priorities and strategies for one to three high-priority zoonotic viruses established. (Y1) 2. High-risk human/animal interfaces (e.g. "value chains", land-use change, etc.) and their interfaces mapped. (Y1) 3. High-risk "nodes" for spillover of zoonotic threats established; behavior and practices that enable spillover identified. (Y2) 4. System for sampling and testing wildlife, livestock, and humans to better define risk from selected zoonotic pathogens in animal reservoirs and disease vectors implemented. (Y2) 5. System for sampling and testing wildlife, livestock, and humans evaluated. (Y3)	Reference Only - DO NOT FILL
4	6. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover validated. (Y3)	Reference Only - DO NOT FILL
5	7. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover implemented. (Y4)	Reference Only - DO NOT FILL
6	8. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover sustained. (Y5)	Reference Only - DO NOT FILL
7	1. One Health workforce trained in accordance with national zoonotic disease prevention needs. (Y5) 2. Capacity of animal health professionals to determine risk based on epidemiology and modeling/analytics demonstrated. (Y4)	Reference Only - DO NOT FILL
8		Reference Only - DO NOT FILL
9		Reference Only - DO NOT FILL
10		Reference Only - DO NOT FILL
11		Reference Only - DO NOT FILL
12		Reference Only - DO NOT FILL
13	1. Multi-sectoral coordination mechanism for zoonotic disease prevention established (NOTE: same mechanism will coordinate GHSA activities). (Y1) 2. Plan for institutionalizing a national multi-sectoral coordination mechanism developed and approved by government. (Y3) 3. Policy, organizational and operational needs for multi-sectoral coordination mechanism established. (Y4) 4. Coordination mechanism in operation that enables cross-sectors/ministries to	Reference Only - DO NOT FILL
14		Reference Only - DO NOT FILL

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15	zoonoses and potential zoonoses are established and functional	Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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20		All Other Relevant Updates
21	Antimicrobial resistance (AMR) detection	Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
22		Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
23		Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
24		Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
25		Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
26	Surveillance of infections caused by AMR pathogens	Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved
27		Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved
28		Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens
29		Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year
30		Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement

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15	collaborate routinely for zoonotic disease prevention. (Y5)	
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18		Reference Only - DO NOT FILL
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21	1. National infection prevention and control (IPC) unit and advisory committee within MOH created an IPC policy and strategic plan endorsed by government health officials. (Y1) 2. IPC focal persons and WASH/IPC committees are established at all hospitals. (Y1) 3. All healthcare workers (HCWs) trained in post-EVD IPC “Safe and Quality Health Services” (SQS) training package. IPC focal persons are linked with mentors to implement SQS recs and are regularly reporting indicators tracking adherence to recommendations to MOH. (Y1)	Reference Only - DO NOT FILL
22	4. Hospital IPC focal persons paired with qualified mentors to implement recommendations in SQS training in their facilities. (Y1)	
23	5. Specialized advanced training developed for IPC focal points at hospitals and health centers. (Y1)	
24	6. Renovations to improve screening/isolation capacity and water/sanitation/hygiene (WASH) in hospitals completed. (Y1)	
25	1. Surveillance for priority HAI implemented in pilot hospitals. (Y4) 2. Clinical laboratory capacity for routine antimicrobial susceptibility testing and detection of AMR Improved. (Y4) 3. Priority laboratories capable of testing for AMR in at least three pathogens using standardized, reliable detection assays and/or culture techniques. (Y5) 4. Summary report of HAI data for pilot hospitals produced. (Y5)	
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31	ANTIMICROBIAL STEWARDSHIP	Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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38		All Other Relevant Updates
39	BIOSAFETY AND BIOSECURITY SYSTEM	Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities. Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities. Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
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44		Level 1: No BSS training or plans are in place Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
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31	1. Health facility IPC focal persons work with qualified mentors to maintain and improve IPC capacity in their facilities. (Y2) 2. SQS training package integrated into medical, nursing, and medical technology pre-service training. (Y2) 3. IPC advanced practice course or certification developed and released. (Y2) 1. National plan to detect and prevent AMR developed and approved. (Y3) 2. Clinicians and pharmacists educated on appropriate antimicrobial usage. (Y3) 3. Surveillance definitions for priority healthcare-associated infections (HAI) developed. (Y3) 4. National IPC technical guidelines reassessed and modified as needed. (Y3)	Reference Only - DO NOT FILL
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39	1. Dangerous pathogen collections for animal and human health identified, documented, and destroyed or stored in a central regional repository. (Y1) 2. Capacities in Biosafety and Biosecurity (BSS) among key laboratories assessed. (Y1) 3. Strengthen the security of Ebola samples from the point of collection to the point of disposal or storage. (Y1)	Reference Only - DO NOT FILL
40	4. Multi-sectoral BSS governance structure at the national level with representatives at the sub-national level created. (Y2) 5. Country specific legislation to support national BSS program drafted. (Y2) 6. Assessment of BSS requirements at key laboratories conducted. (Y2) 7. BSS infrastructure improvements initiated/completed (i.e. enhanced-Biosafety Cabinets (BSC) certification/physical security/transport security) in compliance with WHO and OIE standards. (Y3)	Reference Only - DO NOT FILL
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44	1. BSS focal points in each region established. (Y3) 2. Harmonization of professional training with pre-existing/new BSS curriculums (i.e. laboratory technicians, physicians, hazardous waste disposal technicians, etc.) in compliance with WHO and OIE standards. (Y3) 3. Routine mentoring and supervision for BSS program developed. (Y4) 4. Dangerous pathogens identified and consolidated at a central laboratory in the region (see above). (Y4) 5. Strategic Action Plan for biosafety and biosecurity developed. (Y4)	DO NOT FILL
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46	BIOSAFETY AND BIOTECHNOLOGY	Biosafety and biosecurity training and practices	<p>Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.</p>
47			<p>Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.</p>
48			<p>Level 5:Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.</p>
49		All Other Relevant Updates	
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52	Indicator and event-based systems in place		Level 1: No indicator or event-based surveillance systems in place
53			Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
54			Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
55			Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats

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46	6. System for ensuring lab meets fully functional biosafety conditions and best practices in place. (Y4) 7. National BSS plan approved and disseminated which categorizes risks among indigenous agents and provides guidance on best practices. (Y5) 8. BSS system evaluation conducted. (Y5) 9. BSS capacities in animal labs meet WHO/IHR standards. (Y5)	
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49		Reference Only - DO NOT FILL
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51	1. Medical and surveillance officers trained in IDSR in 20% of the health districts. (Y1) 2. Capacity of electronic disease surveillance systems assessed. (Y1) 3. Coordinating framework established for the implementation electronic health information systems. (Y1) 4. Existing cross-border public health agreements between Liberia and neighboring countries and status of cross-border information exchange assessed. (Y1) 5. Plans for mapping population movements across borders developed, including the priority order of ports to maps. (Y1) 6. Capacities and gaps in current animal and human health surveillance system identified and a plan for strengthening agreed upon with national authorities. (Y1)	
52	7. Community event based surveillance framework in alignment with IDSR developed. (Y1) 8. Surveillance data reported from at least 80% of districts for IDSR diseases. (Y2) 9. Evaluation of IDSR implementation for priority diseases and conditions. (Y2) 10. Medical and surveillance officers trained in IDSR in 40% of the districts. (Y2) 11. Implement public health agreement between Liberia and neighboring countries for	
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	A	B	C
56			Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
57			Level 1: No interoperable, interconnected, electronic real-time reporting system exists
58	Surveillance is an interoperable, interconnected, electric real-time reporting system		Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
59			Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
60			Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
61			Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international
62	Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated		Level 1: No reports related to data collection
63			Level 2: Sporadic reports related to data collection with delay

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56	<p>cross-border public health information sharing and cross-border transport. (Y2)</p> <p>12. One Health surveillance strategy is agreed upon by all stakeholders. (Y2)</p>	
57	<p>1. Surveillance definitions and reporting system for priority healthcare-associated infections developed. (Y2)</p> <p>2. Flow monitoring/population mapping is completed for first wave of high priority ports of entry to determine migration flow patterns. Mapped capacity of agricultural laboratories and agreed to plan to address gaps is complete. (Y2)</p> <p>3. Procedures and protocols for cross-border coordination and information-sharing established. (Y3)</p> <p>4. Hospital and laboratory surveillance data integrated in routine reporting system. (Y3)</p> <p>5. Medical and surveillance officers trained in IDSR in 60% of the health districts. (Y3)</p> <p>6. In-service surveillance teams trained and deployed in accordance with One Health surveillance strategy. (Y3)</p> <p>7. Community event based surveillance rolled out country wide. (Y3)</p> <p>8. Flow monitoring/population mapping is completed for 2nd wave of ports, including unofficial land and maritime ports, to determine migration flow patterns. (Y3)</p>	
58	<p>9. System for creating effective health messaging for inbound and outbound travelers when PH event occurs established. (Y3)</p>	
59	<p>10. Other POEs (seaports, select major land borders) assessed for IHR compliance. (Y3)</p>	
60	<p>11. Surveillance for priority healthcare-associated infections implemented in hospitals. (Y3)</p> <p>12. Address assessment recommendations from animal health laboratories. (Y3)</p> <p>13. Zoonotic diseases relevant to human health integrated into routine surveillance. (Y4)</p>	
61	<p>14. Specimen transportation and DHIS-2 network functioning in at least 80% of districts for IDSR diseases. (Y4)</p> <p>15. Evidence indicating that suspected outbreaks are notified to central level within two days of surpassing epidemic threshold. (Y4)</p> <p>16. Trained medical and surveillance officers in IDSR in 80% of the districts. (Y4)</p> <p>17. Surveillance for priority healthcare-associated infections implemented in health</p>	
62	<p>6. Community event based surveillance M&E framework developed and in practice. (Y4)</p> <p>1. Functioning surveillance system of three core syndromes indicative of public health emergencies. (Y5)</p> <p>2. Proficiency for testing of priority livestock and zoonotic diseases increased. (Y5)</p> <p>3. Surveillance data translated into regional surveillance policy and recommendations. (Y5)</p> <p>4. Evidence of effective use of electronic systems in public health information sharing. (Y5)</p>	
63	<p>5. Eight of twelve IHR core capacities for ports of entry (related to infectious disease</p>	

	A	B	C
64			Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data
65			Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data
66			Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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69			All Other Relevant Updates
70	Laboratory testing for detection of priority diseases		Level 1: National laboratory system is not capable of conducting any core tests
71			Level 2: National laboratory system is capable of conducting 1-2 core tests
72			Level 3: National laboratory system is capable of conducting 3-4 core tests
73			Level 4: National laboratory system is capable of conducting five or more of the ten core tests
74			Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
75	Laboratory Quality System		Level 1: There are no national laboratory quality standards
76			Level 2: National quality standards have been developed but there is no system for verifying their implementation
77			Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
78			Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.

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64	response) met at international airport. (Y5) 6. Systems to continually monitor and address gaps in preparedness at port of entry/land border crossings for public health events in place. (Y5) 7. Sustained One Health surveillance. (Y5)	
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67		Reference Only - DO NOT FILL
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70	1. Mapping of multi-sectoral laboratory capacity including pathogen testing completed. (Y1) 2. Consultative Lab Technical Working Group (LTWG) established. (Y1) 3. Priority pathogens and diseases identified (including zoonotic diseases). (Y1) 4. Multi-sectoral nation-wide Laboratory strategic plan and policy established. (Y1) 5. Plans to reinforce quality assurance are incorporated into plans. (Y1) 6. Government of Liberia's has capability to conduct diagnostics for Ebola. (Y1) 7. Government of Liberia capable of rapidly testing suspected Ebola samples. (Y1) 8. Nationwide tiered laboratory network needs identified (animal and human health labs). (Y2)	Reference Only - DO NOT FILL
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74	1. National laboratory strategic plan and policy reviewed/updated with action items for broad-based capacity building. (Y2) 2. Working towards lab quality management system (QMS) and Quality Assurance towards certification of the NPHL system. (Y2) 3. Diagnostic testing implemented and optimized for viral pathogens in wildlife, livestock, and humans. (Y2) 4. Strengthen the Liberian Institute of Biomedical Research (LIBR) and Liberia's National Reference Laboratory. (Y2) 5. Strengthen Liberia's regional reference laboratory system. (Y2) 6. Nationwide laboratory network formalized and established. (Y3) 7. National Public Health Laboratory (NPHL) capacity at all levels for coordination and specimen collection, handling, shipment and referral established. (Y3)	Reference Only - DO NOT FILL
75	8. National laboratory strategic plan and policy operationalized. (Y3)	
76	9. Laboratory information management system (LIMS) selected and implemented at NPHL. (Y3)	
77	10. National Public Health Laboratory (NPHL) operationalized and functional. (Y4) 11. Accreditation/certification of NPHL process launched. (Y4)	
78	12. Accreditation/certification of Regional laboratories in-process. (Y5)	

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79	All Other Relevant Updates		Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.
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83	Workforce strategy		Level 1: No health workforce strategy exists
84			Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
85			Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
86			Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
87			Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system

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79	13. Evidence of increased capacity in laboratory staff in risk characterization and bioinformatics. (Y5)	
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83	1. At least one key health officer and/or surveillance officer from 50% (38) of all 76 Health Districts has completed FETP training. (Y1) 2. Basic FETP curriculum implemented with 4 cohorts of approximately 30 participants. (Y1) 3. MOH approved “Safe and Quality Health Services” IPC training provided to all healthcare workers. (Y1) 4. Liberian laboratory technicians are able to safely and accurately conduct Ebola diagnostics in a limited number of locations on a limited number of Ebola samples with some oversight provided by outside subject matter experts. (Y1) 5. Officials responsible for disaster preparedness and management have the capacity to establish a national-level, systems-based approach to preparedness. (Y1) 6. At least one key health officer and/or surveillance officer from remaining Health Districts has completed FETP training. (Y2) 7. FETP training incorporated into professional training and/or routine continuing education plan for recently graduated medical doctors and other health professionals. (Y2)	
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88	WORKFORCE DEVELOPMENT (WD) Human resources are available to implement IHR/PVS core capacity requirements	
89		Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities
90		Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level
91		Level 3: Multidisciplinary HR capacity is available at national and intermediate level
92		Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained
93		Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
94	All Other Relevant Updates	
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	D	E
	1. Training Plan to incorporate public health laboratorians and veterinarians in FETP completed. (Y2) 2. IPC supportive supervision and mentorship provided using MOH-approved package. (Y2) 3. Specialized advanced training developed for IPC focal points at hospitals and health centers. (Y2) 4. Pre-service/in-service training opportunities related to surveillance, research, lab testing and IPC identified. (Y2) 5. Liberian Government laboratory technicians at LIBR and Bong are able to safely and accurately conduct laboratory diagnostic activities. (Y2) 6. Liberia has a limited number of government laboratory technicians who are able to train and mentor other Liberian staff in laboratory diagnostics. (Y2) 7. A limited number Liberian Government staff are able to conduct differential diagnosis. (Y2) 8. Liberia has a limited number of government personnel capable of safely and securely transporting samples potentially containing pathogens of security concern. (Y2) 9. Training Plan to establish FETP Intermediate in Liberia completed. (Y3) 10. At least one cohort of FETP incorporating laboratorians and veterinarians completed for key regional and district health personnel and/or surveillance officers not previously trained. (Y3) 11. District surveillance officers in border region supervise community-event-based surveillance in their districts. (Y3) 12. Cadres of animal and human health professionals provided in-service training in requisite One Health skills ongoing. (Y3) 13. IPC advanced practice course or certification developed and released. (Y3) 14. Launch of first cohort of FETP 2-year Intermediate. (Y4)	Reference Only - DO NOT FILL
88	15. At least one cohort of first two tiers (Basic/Intermediate) of FETP incorporating laboratorians and veterinarians completed for key regional and district health personnel and/or surveillance officers not previously trained. (Y4)	
89	16. FETP integrated into MHSA and/or other permanent mechanisms for training highly qualified public health workforce in Liberia. (Y5)	
90	17. At least one cohort of FETP incorporating laboratorians and veterinarians completed for key regional and district health personnel and/or surveillance officers not previously trained. (Y5)	
91	18. One Health workforce has been trained in accordance with national One Health disease “detection” needs. (Y5)	
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93		Reference Only - DO NOT FILL
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A	B	C
96		Level 1: No exercises have been completed
97	Emergency Operations Program	Level 2: Table top exercise has been completed to test systems and decision making Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
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101		Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance) Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
102		
103	Emergency Operations Centre Operating Procedures and Plans	Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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109	All Other Relevant Updates	

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96	1. Strategic framework for the MOH EOC developed. (Y1) 2. Construction and equipping of MOH EOC completed. (Y1) 3. Trained EOC core and surge staff assigned to functional roles. (Y1) 4. Create a framework for SOPs. (Y1) 5. At least one MOH EOC staff trained in public health emergency management fellowship. (Y1) 6. EOC/IMS personnel at the subnational level for localized EOC/IMS coordination and management established. (Y1)	Reference Only - DO NOT FILL
97	7. Increased capacity among military medical leaders and experts to prevent, detect, and respond to infectious disease outbreaks. (Y1) 8. Capacity of Roberts International Airport to respond to an event of public health concern is assessed. (Y1)	Reference Only - DO NOT FILL
98	9. All hazards or communicable disease response plan is in place at Roberts International Airport. (Y1)	Reference Only - DO NOT FILL
99	1. Validated Emergency Operations plan framework for the MOH EOC developed. (Y2) 2. Additional MOH EOC staff trained in public health emergency management fellowship. (Y2) 3. Initial operational capacity of EOC achieved. (Y2) 4. Public health emergency management authority to the MOH EOC established. (Y2)	Reference Only - DO NOT FILL
100		Reference Only - DO NOT FILL
101	1. Emergency Operations Plan developed and operationalized. (Y2) 2. Exercise/testing of communicable disease response plan at Roberts International Airport is conducted on a routine basis. (Y2) 3. Information from laboratory, surveillance, and information systems integrated into the EOC. (Y3) 4. EOC facilities, staff, and systems strengthened and maintained. (Y3) 5. EOC plans and procedures validated. (Y3) 6. Sustainability and transition plan created. (Y3)	Reference Only - DO NOT FILL
102	7. EOC facilities, staff, and systems strengthened and maintained. (Y4) 8. EOC plans and procedures tested, validated and improved. (Y4) 9. Transition plans of operations of EOC to MOH completed. (Y4) 10. EOC plans and procedures tested, validated, and improved. (Y5) 11. National capacity for multi-sectoral preparedness and response established and functional. (Y5)	Reference Only - DO NOT FILL
103		Reference Only - DO NOT FILL
104		Reference Only - DO NOT FILL
105		Reference Only - DO NOT FILL
106		Reference Only - DO NOT FILL
107		Reference Only - DO NOT FILL
108		Reference Only - DO NOT FILL
109		Reference Only - DO NOT FILL

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110	**Adjustment has been made to the standard JEE language to reflect multisectoral		

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110	, OH aspect of EPT.	

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2	GHSA Action Package Indicators	Indicator Capacity Levels	
3	ZOONOTIC DISEASE (ZD)	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place
4			Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place
5			Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern
6			Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern
7			Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement
8			Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.
9			Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.
10		One Health Workforce** (Veterinary or Animal Health Workforce)	Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
11			Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
12			Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing
13			Level 1: No mechanism in place

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2	GHSA 5-Year Country Roadmap Milestones	Key Results
3	1. High-risk human/animal interfaces (e.g. "value chains", land-use change, etc.) and their interfaces mapped. (Y1) 2. High-risk "nodes" for spillover of zoonotic threats established; behavior and practices that enable spillover identified upon completion of mapping in year 1. (Y2) 3. System for sampling and testing wildlife, livestock, and humans to better define risk from selected zoonotic pathogens in animal reservoirs and disease vectors implemented. (Y2) 4. System for sampling and testing wildlife, livestock, and humans evaluated. (Y3) 5. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover validated. (Y3) 6. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover implemented. (Y4) 7. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover sustained. (Y5)	Reference Only - DO NOT FILL
8	1. One Health workforce trained in accordance with national zoonotic disease prevention needs. (Y5) 2. Capacity of animal health professionals to determine risk based on epidemiology and modeling/analytics demonstrated. (Y4)	Reference Only - DO NOT FILL
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13	1. Policy, organizational and operational needs for multi-sectoral coordination mechanism established. (Y4) 2. One-Health stakeholders strategically identified and a mechanism for multi-sectoral coordination established, aligned with a common mission statement. (Y1) 3.	DO NOT

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14	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 2: National policy, strategy or plan for the response to zoonotic events is in place
15			Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is
16			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
17			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
29	Surveillance of infections caused by AMR pathogens		Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved
30			Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved
31			Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens
32			Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year

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14	Coordination mechanism in operation that enables cross-sectors/ministries to collaborate routinely for zoonotic disease prevention. (Y5) 4. Plan for institutionalizing a national multi-sectoral coordination mechanism developed and approved by government. (Y3)	
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18		Reference Only - DO NOT FILL
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20	1. Enhanced infection prevention and control in health facilities. (Y1) 2. Development of AMR capacity in select laboratories. (Y1) 3. Development of AMR national strategic plan. (Y1) 4. Implementation of AMR national strategic plan. (Y2) 5. Laboratories performing AMR Testing. (Y2)	Reference Only - DO NOT FILL
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25	1. Capacity to routinely detect AMR in humans at national level demonstrated. (Y3) 2. Country-wide tuberculosis multi-drug resistance MDR detection and surveillance expanded. (Y3) 3. Operationalize AMR National Strategy. (Y3) 4. Evidence of basic level diagnostic capability at National Level Laboratory (most likely CPHL/NHL) established. (Y3) 5. Infection control assessment completed and strategy for infection prevention and control developed. (Y3)	Reference Only - DO NOT FILL
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30	ANTIMICRO		Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
31			Level 1: No national plan for antimicrobial stewardship has been approved
32		Antimicrobial stewardship activities	Level 2: National plan for antimicrobial stewardship has been approved
33			Level 3: Designated centers are conducting some antimicrobial stewardship practices
34			Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year
35			Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
36		All Other Relevant Updates	
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39	(BSS)		Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures
40		Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities	Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities.
41			Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.
42			Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
43			Level 1: No BSS training or plans are in place
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31	1. Demonstrated capability to detect AMR at central level National Referral Hospital. (Y4) 2. Demonstrated timely recognition, diagnosis and timely reporting of AMR in humans. (Y5) 3. Demonstrated laboratory capacity AMR in at least two (2) sub-national hospital laboratories and the National Animal Health Laboratory (LNERV), including transportation and information reporting to the national level. (Y5) 4. Antimicrobial Stewardship Plan to prevent AMR spread completed. (Y5)	Reference Only - DO NOT FILL
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36		Reference Only - DO NOT FILL
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39	1. Baseline capacities in BS&S established among key laboratories. (Y1) 2. In-service training in BS&S initiated. (Y1) 3. Multi-sectoral Biosafety and Biosecurity (BS&S) governance structure created at the national level with representatives at the sub-national level. (Y2) 4. Strategic Action Plan for biosafety and biosecurity developed. (Y2) 5. Country specific legislation to support national biosafety and security program drafted. (Y2)	Reference Only - DO NOT FILL
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41	6. Assessment of Biosafety and Biosecurity requirements at key laboratories conducted. (Y2) 7. BS&S infrastructure improvements initiated/completed (i.e. enhanced-Biosafety Cabinets (BSC) certification/physical security/transport security) in compliance with WHO and OIE standards. (Y3) 8. Biosafety and Biosecurity focal points in each region established. (Y3)	Reference Only - DO NOT FILL
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44	1. Harmonization of professional training with pre-existing/new BS&S	

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45			Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
46		Biosafety and biosecurity training and practices	Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
47			Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.
48			Level 5:Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.
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51		All Other Relevant Updates	

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45	<p>curriculums (i.e. laboratory technicians, physicians, veterinarians, hazardous waste disposal technicians, etc) in compliance with WHO, AIEA, and OIE standards. (Y3)</p> <p>2. Routine mentoring and supervision for BS&S program developed. (Y4)</p> <p>3. Dangerous pathogens identified and consolidated at a central laboratory. (Y4)</p> <p>4. System for ensuring lab meets fully functional biosafety conditions and best practices in place. (Y4)</p> <p>5. National BS&S plan approved and disseminated which categorizes risks among indigenous agents and provides guidance on best practices. (Y5)</p> <p>6. BS&S system evaluation conducted. (Y5)</p> <p>7. BS&S capacities in animal labs meet WHO/IHR standards. (Y5)</p>	
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49		Reference Only - DO NOT FILL
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SURVEILLANCE (SURV)	<p>Indicator and event-based systems in place</p> <p>52</p> <p>53</p> <p>54</p> <p>55</p> <p>56</p> <p>57</p> <p>58</p> <p>59</p> <p>60</p> <p>61</p> <p>Surveillance is an interoperable, interconnected, electric real-time reporting system</p>	<p>Level 1: No indicator or event-based surveillance systems in place</p>
		<p>Level 2: Indicator and event-based surveillance system(s) planned to begin within a year</p>
		<p>Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats</p>
		<p>Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats</p>
		<p>Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support</p>
		<p>Level 1: No interoperable, interconnected, electronic real-time reporting system exists</p>
		<p>Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems</p>
		<p>Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.</p>
		<p>Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government</p>
		<p>Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international</p>

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52	1. Community-based surveillance (CBS) structures established. (Y1) 2. Capacities and gaps of IDSR and electronic disease surveillance systems assessed (both human and animal health). (Y1) 3. Strengthened IDSR activities for investigation and response to epidemics. (Y1) 4. Strengthened personnel, logistics and communication capacity for IDSR at all levels. (Y1) 5. Coordinating framework established for the implementation electronic health information systems. (Y1) 6. Public health emergency plans and standard operational procedures in place at international airports, seaports and major land crossings, in accordance with international best practices, agreements, and the IHR (2005). (Y1) 7. International agreements on animal exportation and animal health data sharing evaluated. (Y1) 8. National CBS plan established, with priority border communities and geographic areas identified for implementation. (Y2)	Reference Only - DO NOT FILL
53	9. Hospital and laboratory surveillance data integrated in routine DHIS-2 reporting system. (Y2)	Reference Only - DO NOT FILL
54	10. Strengthened real-time surveillance at the lower health levels. (Y2)	Reference Only - DO NOT FILL
55	11. Public health agreement between Senegal and neighboring countries for cross-border public health information sharing, specimen sharing and cross-border transport drafted or revised. (Y2)	Reference Only - DO NOT FILL
56		Reference Only - DO NOT FILL
57	1. One Health surveillance strategy is agreed upon by all stakeholders. (Y2) 2. Community-event based surveillance initiated in priority border districts. (Y3)	Reference Only - DO NOT FILL
58	3. Timely surveillance data reported from at least 80% of districts for all IDSR priority diseases. (Y3)	Reference Only - DO NOT FILL
59	4. Timely surveillance data reported from at least 80% of districts for all animal health priority diseases. (Y3) 5. Medical, animal health, and surveillance officers trained in IDSR in 60% of the health districts. (Y3)	Reference Only - DO NOT FILL
60	6. In-service surveillance teams trained and deployed in accordance with One Health surveillance strategy. (Y3) 7. Zoonotic diseases relevant to human health integrated into routine surveillance. (Y4) 8. Specimen transportation and DHIS-2 network functioning in at least 80% of districts for IDSR diseases. (Y4)	Reference Only - DO NOT FILL
61		Reference Only - DO NOT FILL

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62	Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated	Level 1: No reports related to data collection
63		Level 2: Sporadic reports related to data collection with delay
64		Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data
65		Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data
66		Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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70	Laboratory testing for detection of priority diseases	Level 1: National laboratory system is not capable of conducting any core tests
71		Level 2: National laboratory system is capable of conducting 1-2 core tests
72		Level 3: National laboratory system is capable of conducting 3-4 core tests
73		Level 4: National laboratory system is capable of conducting five or more of the ten core tests
74		Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
STEMS (LAB)		

	D	E
62	1. Evidence indicating that suspected outbreaks are notified to central level within two days of surpassing epidemic threshold. (Y4) 2. At least one medical or surveillance officers trained in IDSR at the district level. (Y4) 3. Functioning surveillance system of three core syndromes indicative of public health emergencies. (Y5) 4. Surveillance data translated into regional surveillance policy and recommendations. (Y5) 5. Evidence of effective use of electronic systems in public health information sharing. (Y5)	Reference Only - DO NOT FILL
63	6. Compliance with IHR and/or mechanisms in place that support international best practices at ports of entry and border crossings. (Y5)	Reference Only - DO NOT FILL
64	7. Systems to continually monitor and address gaps in preparedness at port of entry/land border crossings for public health events in place. (Y5)	Reference Only - DO NOT FILL
65	8. Sustained One Health surveillance. (Y5)	Reference Only - DO NOT FILL
66		Reference Only - DO NOT FILL
67		Reference Only - DO NOT FILL
68		Reference Only - DO NOT FILL
69	1. Mapping of multi-sectorial laboratory capacity including pathogen testing and animal health completed. (Y1) 2. Multi-sectorial nation-wide Laboratory strategic plan and policy established. (Y1) 3. National and/or international sample referral network system established. (Y1) 4. Priority pathogens and diseases identified (including zoonotic diseases). (Y1) 5. Quality assurance (QA) across all levels of the NPHL and LNERV network reinforced. (Y1) 6. Identify laboratories for strengthening diagnostic capacities for priority zoonotic diseases. (Y1)	Reference Only - DO NOT FILL
70	1.	Reference Only - DO NOT FILL
71	2. Nationwide tiered laboratory network needs identified. (Y2) 3. National human and animal health laboratory strategic plan and policy reviewed/updated with action items for broader-based capacity building. (Y2)	Reference Only - DO NOT FILL
72		Reference Only - DO NOT FILL
73		Reference Only - DO NOT FILL
74		Reference Only - DO NOT FILL

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75	LAB STRENGTHENING SYSTEMS	Laboratory Quality System
76		Level 1: There are no national laboratory quality standards
77		Level 2: National quality standards have been developed but there is no system for verifying their implementation
78		Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
79		Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.
80		Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.
81		All Other Relevant Updates
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83	Workforce strategy	Level 1: No health workforce strategy exists
84		Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)

	D	E
75	<p>1. Lab quality management system (QMS) and Quality Assurance towards certification across all levels of the NPHL and LNERV system reinforced. (Y2)</p> <p>2. Diagnostic testing implemented and optimized for viral pathogens in wildlife, livestock, and humans. (Y2)</p> <p>3. Nationwide laboratory network formalized and established. (Y3)</p> <p>4. National Public Health Laboratory (NPHL) capacity at all levels for coordination and specimen collection, handling, shipment and referral established. (Y3)</p> <p>5. LNERV capacity at all levels for coordination and specimen collection, handling, shipment and referral established. (Y3)</p> <p>6. National laboratory strategic plan and policy operationalized. (Y3)</p> <p>7. Laboratory information management system (LIMS) selected and implemented at NPHL. (Y3)</p>	Reference Only - DO NOT FILL
76	<p>8. LIMS selected and implemented at LNERV and harmonized with NPHL. (Y3)</p> <p>9. National Public Health Laboratory (NPHL) operationalized and functional. (Y4)</p>	Reference Only - DO NOT FILL
77	10. Accreditation/certification of NPHL process launched. (Y4)	Reference Only - DO NOT FILL
78	11. Accreditation/certification of Regional laboratories in-process. (Y5)	Reference Only - DO NOT FILL
79	12. Evidence of increased capacity in laboratory staff in risk characterization and bioinformatics. (Y5)	Reference Only - DO NOT FILL
80		Reference Only - DO NOT FILL
81		Reference Only - DO NOT FILL
82	<p>1. At least one key health officer and/or surveillance officer from 50% (38) of all 76 Health Districts has completed FETP Tier One training. (Y1)</p> <p>2. 9-month Intermediate FETP curriculum developed. (Y1)</p> <p>3. Participants in West Africa regional Advanced FETP have conducted outbreak investigation and/or served as trainers. (Y1)</p> <p>4. Pre-service/in-service training opportunities related to surveillance, research, and lab testing identified. (Y1)</p> <p>5. Enhanced capacity and awareness of Infection prevention and control for Ebola and similar threats in health facilities. (Y1)</p> <p>6. At least one key human and animal health officer and/or surveillance officer from remaining Health Districts has completed FETP Tier One training. (Y2)</p>	Reference Only - DO NOT FILL
83	<p>7. Four Residents graduated from 2015-17 cohort of advanced regional West African FETP, and placed in key posts in appropriate ministries. (Y2)</p> <p>8. At least one key human and animal health officer and/or surveillance officer from all 14 Health Regions has completed FETP Intermediate Tier training. (Y2)</p>	Reference Only - DO NOT FILL
84		Reference Only - DO NOT FILL

	A	B	C
85			Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
86			Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
87			Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
88		Human resources are available to implement IHR/PVS core capacity requirements	Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level Level 3: Multidisciplinary HR capacity is available at national and intermediate level Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained) Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
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95		All Other Relevant Updates	
96			Level 1: No exercises have been completed

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85	9. FETP Intermediate level training incorporated into professional training curriculum and/or routine continuing education plan for recently graduated medical doctors, veterinarians and other health professionals. (Y2)	
86	10. Training Plan to incorporate public health laboratorians and veterinarians in tiered FETP strategy completed. (Y2)	
87	11. Cross-border surveillance module fully integrated into tiered FETP approach in Senegal. (Y2)	
88	1. Training Plan to establish FETP Advanced in Senegal completed. (Y3) 2. At least one cohort of first two tiers (Basic/Intermediate) of FETP incorporating laboratorians and veterinarians completed for key regional and district health personnel and/or surveillance officers not previously trained. (Y3) 3. District surveillance officers in border region supervise community-event-based surveillance in their districts. (Y3) 4. National Park Service and district veterinary service surveillance officers design and supervise community based surveillance in animal health. (Y3) 5. Cadres of animal and human health professionals provided in-service training in requisite One Health skills ongoing. (Y3) 6. Launch of first cohort of FETP 2-year Advanced. (Y4) 7. At least one cohort of first two tiers (Basic/Intermediate) of FETP incorporating laboratorians and veterinarians completed for key regional and district health personnel and/or surveillance officers not previously trained. (Y4)	Reference Only - DO NOT FILL
89	8. FETP Tiered strategy integrated into appropriate ministries and/or other permanent mechanisms for training highly qualified public health workforce in Senegal. (Y5)	
90	9. At least one cohort of first two tiers (Basic/Intermediate) of FETP incorporating laboratorians and veterinarians completed for key regional and district health personnel and/or surveillance officers not previously trained. (Y5)	
91	10. One Health workforce has been trained in accordance with national One Health disease “detection” needs. (Y5)	
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93		Reference Only - DO NOT FILL
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96	1. Established public health emergency management authority through the development of policies, protocols, and guidelines. (Y1) 2. Increased public health emergency management capacity to respond to public health threats at the national level. (Y1) 3. Improved evidence for decision-making in public health emergency	DO NOT FILL

	A	B	C
97	EMERGENCY OPERATIONS CENTER (EOC)*	Emergency Operations Program	Level 2: Table top exercise has been completed to test systems and decision making Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency
98			Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions
99			Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
100			Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place
101			Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance) Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
102	Emergency Operations Centre Operating Procedures and Plans		Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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106		All Other Relevant Updates	
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110	**Adjustment has been made to the standard JEE language to reflect multisectoral		

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97	management. (Y1) 4. One Health preparedness framework developed for multi-sectorial rapid response by the Health EOC. (Y1) 5. All-Hazards EOC personnel identified, trained, SOP developed. (Y1) 6. Emergency Operations framework for the MOH EOC developed. (Y2) 7. Construction and equipping of MOH EOC completed. (Y2)	
98	8. Integration of All-Hazards EOC and Health EOC. (Y2) 9. Initial operational capacity of Health EOC achieved. (Y3) 10. Information from laboratory, surveillance, and information systems developed integrated into the Health EOC. (Y3)	
99	11. Strengthening and maintenance of Health EOC including facilities, staff, and systems. (Y3)	
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101	1. Health EOC plans and procedures validated. (Y3) 2. Integration of All-Hazards EOC and Health EOC. (Y3) 3. Strengthening and maintenance of All Hazards and Health EOCs including facilities, staff, and systems. (Y4) 4. Test, validate, and improve All-Hazards and Health EOCs plans and procedures. (Y4)	
102	5. Integration of All-Hazards EOC and Health EOC. (Y4) 6. Strengthening and maintenance of Health and All-Hazards EOCs including facilities, staff, and systems. (Y5) 7. Test, validate, and improve Health and All-Hazards EOC plans and procedures. (Y5)	
103	8. National capacity for multi-sectoral preparedness and response established and functional. (Y5) 9. Integration of All-Hazards EOC and Health EOC. (Y5)	
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2	GHSA Action Package Indicators	Indicator Capacity Levels	
3	ZOONOTIC DISEASE (ZD)	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place
4			Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place
5			Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern
6			Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern
7			Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement
8			Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.
9			Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.
10		One Health Workforce** (Veterinary or Animal Health Workforce)	Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
11			Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
12			Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing
13			Level 1: No mechanism in place

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2	GHSA 5-Year Country Roadmap Milestones	Key Results
3	1. Initial framework and standardized data collection protocols for high risk zoonotic diseases developed. (Y1) 2. Data collection and improved capacity to conduct diagnostic surveillance in wildlife for Ebola and other high-consequence pathogens. (Y1) 3. High-risk “nodes” for spillover of zoonotic threats identified; behavior and practices that enable spillover identified. (Y2) 4. System for sampling and testing wildlife, livestock, and humans to better define risk from selected zoonotic pathogens in animal reservoirs and disease vectors implemented. (Y2)	Reference Only - DO NOT FILL
4	5. System for sampling and testing wildlife, livestock, and humans evaluated. (Y3)	
5	6. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover validated. (Y3)	
6	7. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover implemented. (Y4)	
7	8. Package of One Health "risk reduction" measures targeting high risk practices and behaviors that enable spillover sustained. (Y5)	
8	1. Capacity of animal health professionals to determine risk based on epidemiology and modeling/analytics demonstrated. (Y4) 2. One Health workforce trained in accordance with national zoonotic disease prevention needs. (Y5)	
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13	1. Multi-sectoral coordination mechanism for zoonotic disease prevention established (NOTE: same mechanism will coordinate GHSA activities). (Y1) 2. Policy, organizational and operational needs for multi-sectoral coordination mechanism established. (Y4) 3. Continue	

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14	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 2: National policy, strategy or plan for the response to zoonotic events is in place
15			Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is
16			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
17			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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21			All Other Relevant Updates
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24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
29	Surveillance of infections caused by AMR pathogens		
30			Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved
31			Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved
32			Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens
33			Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year

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14	coordination mechanism that enables cross-sectors/ministries to collaborate routinely for zoonotic disease prevention. (Y5)	
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21	1. National infection prevention and control (IPC) unit and advisory committee created within MoHS. (Y1) 2. National IPC Policy and Guidelines finalized and disseminated. (Y1) 3. IPC knowledge and practices improved throughout the healthcare system (public and private) in ~ 50% of districts. (Y1) 4. IPC data monitoring system developed. (Y1) 5. IPC knowledge and practices improved in 75% of all districts. (Y2) 6. IPC advanced practice course or certification developed and released. (Y2)	Reference Only - DO NOT FILL
22	7. IPC data monitoring system established at all levels (National, District, and Hospital). (Y2)	
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26	1. Surveillance definitions for priority healthcare-associated infections (HAI) developed. (Y3) 2. National IPC technical guidelines reassessed and modified as needed. (Y3) 3. Implement the AMR prevention and detection plan. (Y4) 4. Priority laboratories capable of testing for AMR in at least three pathogens using standardized, reliable detection assays and/or culture techniques. (Y5) 5. Summary report of HAI data for pilot hospitals produced. (Y5)	Reference Only - DO NOT FILL
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30	ANTIMICRO		Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
31			Level 1: No national plan for antimicrobial stewardship has been approved
32		Antimicrobial stewardship activities	Level 2: National plan for antimicrobial stewardship has been approved
33			Level 3: Designated centers are conducting some antimicrobial stewardship practices
34			Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year
35			Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
36		All Other Relevant Updates	
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39	(BSS)		Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures
40		Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities	Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities.
41			Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.
42			Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
43			Level 1: No BSS training or plans are in place
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30	<p>1. National plan to detect and prevent AMR developed and approved. (Y3)</p> <p>2. Clinicians and pharmacists educated on appropriate antimicrobial usage. (Y3)</p> <p style="text-align: center;">3.</p> <p>Mentorship provided to health facility IPC focal persons to maintain and improve IPC capacity and quality in their facilities at ~50% of districts. (Y2)</p>	Reference Only - DO NOT FILL
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36		Reference Only - DO NOT FILL
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39	<p>1. Dangerous pathogen collections for animal and human health identified, documented, and destroyed or stored in a central regional repository. (Y1)</p> <p>2. Capacities in Biosafety and Biosecurity (BSS) among key laboratories assessed. (Y1)</p> <p>3. Security of Ebola samples strengthened from the point of collection to the point of disposal or storage. (Y1)</p> <p>4. Comprehensive policy and mechanisms established for specimen tracking, transport and storage. (Y1)</p>	Reference Only - DO NOT FILL
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41	<p>5. Assessment of BSS requirements at key One Health laboratories conducted. (Y2)</p>	Reference Only - DO NOT FILL
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45	BIOSAFETY AND BIOSECURITY	Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins. Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
46	Biosafety and biosecurity training and practices	Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above. Level 5:Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.
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51	All Other Relevant Updates	
52		Level 1: No indicator or event-based surveillance systems in place
53	Indicator and event-based systems in place	Level 2: Indicator and event-based surveillance system(s) planned to begin within a year Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
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45	<p>1. Professional training with pre-existing/new BSS curriculums (i.e. laboratory technicians, physicians, hazardous waste disposal technicians, etc.) harmonized in compliance with WHO and OIE standards. (Y3)</p> <p>2. System for ensuring One Health lab meets fully functional biosafety conditions and best practices in place. (Y4)</p> <p>3. BSS system evaluation conducted. (Y5)</p> <p>4. BSS capacities in animal labs meet WHO/IHR and OIE/PVS standards. (Y5)</p>	
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49		Reference Only - DO NOT FILL
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52	<p>1. MOHS supported in development of a national surveillance strategy. (Y1)</p> <p>2. MOHS supported to establish and maintain IDSR for selected diseases at all levels. (Y1)</p> <p>3. Electronic tool for IDSR developed. (Y1)</p> <p>4. Cross border collaboration for prevention and control of EVD and other epidemic prone diseases strengthened. (Y1)</p>	
53	<p>5. Capacities and gaps in current animal health surveillance systems identified. (Y1)</p>	
54	<p>6. Community event based surveillance system plans finalized. (Y1)</p>	

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55	SURVEILLANCE (SURV)	<p>Surveillance is an interoperable, interconnected, electric real-time reporting system</p> <p>Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated</p>	Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
56			Level 1: No interoperable, interconnected, electronic real-time reporting system exists
57			Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
58			Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
59			Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
60			Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international
61			Level 1: No reports related to data collection
62			Level 2: Sporadic reports related to data collection with delay
63			Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data
64			Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data
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55	7. Surveillance data reported from at least 80% of districts for priority IDSR diseases. (Y1) 8. Additional priority diseases added to IDSR strategy for year 2. (Y2)	
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57	1. Surveillance data reported from at least 80% of districts for year 1 & 2 priority IDSR diseases. (Y2) 3. Medical and surveillance officers trained in IDSR in 40% of the districts. (Y2) 4. Community event based surveillance system implemented in 50% districts. (Y2) 5. Develop and implement public health data exchange/sharing agreement between Sierra Leone and neighboring countries for cross-border information sharing. (Y2)	
58	6. Plan developed for strengthening animal health surveillance implemented at select target facilities. (Y2)	
59	7. Hospital and laboratory surveillance data integrated in routine reporting system. (Y3) 8. Medical and surveillance officers trained in IDSR in 60% of the health districts. (Y3)	
60	9. In-service surveillance teams trained and deployed in accordance with One Health surveillance strategy. (Y3) 10. Community event based surveillance rolled out country wide. (Y3) 11. Port of Entry (seaports and select major land borders) assessed for IHR compliance. (Y3)	
61	12. Surveillance for priority healthcare-associated infections implemented in all government hospitals. (Y3) 13. Zoonotic diseases relevant to human health integrated into routine surveillance. (Y4)	
62	1. Medical and surveillance officers trained in IDSR in 80% of the health districts. (Y4)	
63	2. Sustained One Health surveillance. (Y5)	
64	3. Medical and surveillance officers trained in IDSR in 100% of the health districts. (Y5)	
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66			Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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69		All Other Relevant Updates	
		Laboratory testing for detection of priority diseases	<p>Level 1: National laboratory system is not capable of conducting any core tests</p> <p>Level 2: National laboratory system is capable of conducting 1-2 core tests</p> <p>Level 3: National laboratory system is capable of conducting 3-4 core tests</p> <p>Level 4: National laboratory system is capable of conducting five or more of the ten core tests</p> <p>Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance</p>
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		Laboratory Quality System	<p>Level 1: There are no national laboratory quality standards</p> <p>Level 2: National quality standards have been developed but there is no system for verifying their implementation</p> <p>Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.</p> <p>Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.</p> <p>Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.</p>
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	1. Mapping of multi-sectoral laboratory capacity including pathogen testing completed. (Y1) 2. Priority pathogens and diseases identified (including zoonotic diseases). (Y1) 3. Multi-sectoral nation-wide Laboratory strategic plan and policy established. (Y1) 4. Plans to reinforce quality assurance incorporated into plans. (Y1) 5. Government of Sierra Leone's has capability to conduct diagnostics for Ebola and other zoonotic pathogens in animal and humans. (Y1)	Reference Only - DO NOT FILL
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71	1. Strengthened laboratory workforce through provision of technical and management laboratory training. (Y4)	
72	2. Established Laboratory Information Management System (LIMS). (Y4)	
73	1. Accreditation/certification of Regional laboratories in-process. (Y5) 2. Evidence of increased capacity in laboratory staff in risk characterization and bioinformatics. (Y5)	
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75	1. Nationwide tiered laboratory network needs identified (animal and human health labs). (Y2) 2. National laboratory strategic plan and policy reviewed/updated with action items for broad-based capacity building. (Y2) 3. Lab quality management system (QMS) and Quality Assurance plan in place. (Y2) 4. Diagnostic testing implemented and optimized for viral pathogens in wildlife, livestock, and humans. (Y2)	Reference Only - DO NOT FILL
76	5. Strengthen the Sierra Leone National Public Health Institute and support capacity building at the Teko Animal Health Laboratory. (Y2)	
77	6. Nationwide laboratory network formalized and established for human health. (Y3)	
78	7. National One Health laboratory strategic plan and policy operationalized. (Y3)	
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83	WORKFORCE DEVELOPMENT (WD)	Workforce strategy	Level 1: No health workforce strategy exists
84			Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
85			Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
86			Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
87			Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
88	Human resources are available to implement IHR/PVS core capacity requirements		Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities
89			Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level
90			Level 3: Multidisciplinary HR capacity is available at national and intermediate level
91			Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained
92			Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
93	All Other Relevant Updates		
94			Level 1: No exercises have been completed
95			Level 2: Table top exercise has been completed to test systems and decision making
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83	<p>1. Establishment of a basic Field Epidemiology Training Program (FETP). (Y1)</p> <p>2. Graduation of at least two trainee cohorts from FETP. (Y1)</p> <p>3. Shared vision among national leadership and key stakeholders for Animal Health workforce for early detection of possible zoonotic disease threats (including goal to expand veterinary capacity of one veterinarian per district). (Y1)</p>	Reference Only - DO NOT FILL
84	4. In-service training opportunities related to surveillance, research, and lab testing identified. (Y1)	Reference Only - DO NOT FILL
85	5. Sierra Leone laboratory technicians able to safely and accurately conduct Ebola diagnostics in a limited number of locations on a limited number of Ebola samples with some oversight provided by outside subject matter experts. (Y1)	Reference Only - DO NOT FILL
86	6. One Health workforce has been trained in accordance with national One Health disease “detection” needs. (Y5)	Reference Only - DO NOT FILL
87		Reference Only - DO NOT FILL
88	<p>1. Training Plan to incorporate public health laboratorians and veterinarians in tiered FETP strategy completed. (Y2)</p> <p>2. Conduct a workforce needs assessment and provide TA in the development of a multi-sectoral workforce development plan. (Y2)</p> <p>3. Ensure a sufficient number of government laboratory technicians who are able to train and mentor other Sierra Leone staff in laboratory diagnostics. (Y2)</p>	Reference Only - DO NOT FILL
89	4. Ensure a sufficient number of Sierra Leonean Government staff are able to conduct differential diagnosis. (Y2)	Reference Only - DO NOT FILL
90	5. Ensure a sufficient number of government personnel capable of safely and securely transporting samples potentially containing pathogens of security concern. (Y2)	Reference Only - DO NOT FILL
91	6. Established in-service training opportunities for public health workers on surveillance, research, and laboratory testing methods. (Y3)	Reference Only - DO NOT FILL
92	7. Public Health Institute established (3 months training, long term training, MPH program) and develop a career pathway for graduates. (Y4)	Reference Only - DO NOT FILL
93		Reference Only - DO NOT FILL
94		Reference Only - DO NOT FILL
95		Reference Only - DO NOT FILL
96	<p>1. Emergency management regulations assessed and, where necessary, revised to provide national legal framework for emergency response. (Y1)</p> <p>2. Emergency operations workforce assessed and trained. (Y1)</p> <p>3. Emergency operations plans and procedures established. (Y1)</p>	Reference Only - DO NOT FILL
97		Reference Only - DO NOT FILL

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98	Emergency Operations Program	Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
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101		Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance) Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
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103	Emergency Operations Centre Operating Procedures and Plans	Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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110	**Adjustment has been made to the standard JEE language to reflect multisectoral	

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98	4. EOC infrastructure established and/or strengthened. (Y1) 5. Successful transition from Ministry of Defense to MoHS, including effectively managing a response. (Y1)	
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101	1. Emergency response simulations conducted and evaluated, including with experiential learning activities. (Y1) 2. Additional training in Emergency Management for key staff/leadership. (Y2) 3. Actual responses (if any) evaluated in after-action analysis. (Y2) 4. Further revisions of EOC standards and/or regulations made as required. (Y3)	Reference Only - DO NOT FILL
102	5. Ongoing infrastructural assessment and sustainable support identified. (Y3) 6. Further revisions of EOC standards and/or regulations made as required. (Y4)	
103	7. Ongoing infrastructural assessment and sustainable support identified. (Y4) 8. Further revisions of EOC standards and/or regulations made as required. (Y5)	
104	9. Ongoing infrastructural assessment and sustainable support identified. (Y5)	
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